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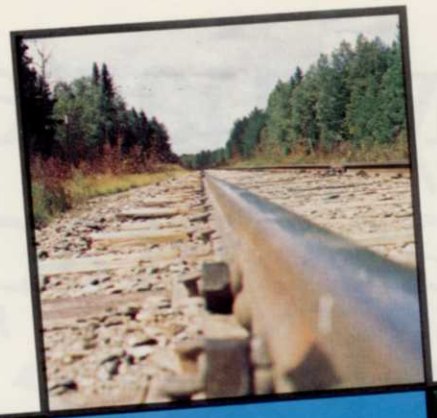

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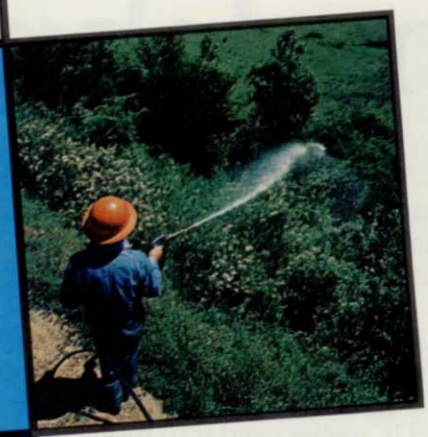

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**Cover:** Dwarf Japanese Garden Juniper, *Procumbens* 'Nana,' is a slow growing ground cover for flowering trees such as *Malus floribundi.*

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# GREEN INDUSTRY NEWS

## Sod Convention Brings Industry Together

Manufacturers of sod equipment, seed distributors, turfgrass researchers, and sod growers from throughout Canada and the U.S. exchanged ideas at the American Sod Producers Association summer convention and field days in Edmonton, Alberta.

Under three days of July sunny skies, close to 600 ASPA members, families, and representatives of the turfgrass industry together enjoyed serious discussion and Western Canadian style entertainment.

When most arrived on Sunday, Edmonton was in full swing of its celebration of Klondike Days which relive an era past when settlers first began flooding the area for the rush of gold. Townspeople dressed in colorful garb of those days strutted through the downtown streets blocked to traffic.

Business began on Monday with a panel discussion in the host Four Seasons Hotel on "survival during an economic recession." Ray Johnson of Shamrock Turf Nurseries moderated the panel of speakers chosen from various geographic regions. Although all the speakers agreed that nothing is certain with the economy and that if they knew the answers they'd be millionaires, they said housing projections range to 23 million in the 80's, a good indicator of what the sod business will be.

**Equipment innovations** introduced at the Sod Producers summer show enthralled the crowd. The barn (background) housed indoor exhibits and a few mosquitos.

Big Lake Sod Farm, Ltd. hosted the irrigation demonstrations Monday afternoon and on Tuesday Don Stumborg, convention chairman, hosted the field demonstrations and exhibits on his 2,900-acre Gem Sod Farms. Observers could not come close enough to the new equipment and innovations revealed.

Roseman Mower Corp., Nunes Mfg., and Brouwer Turf Equipment demonstrated their latest mowers; Nunes Turf Vac Corp., and Brouwer picked up the clippings with their sweepers; Delmarva Textile Co. and Conwed Corp. exhibited netting; Spyder Mfg. Co., Princeton Mfg. Co., and Brouwer showed how their forklifts handle sod pallets, which became filled from the work of harvesters made by Brouwer, Nunes, and Princeton. Ryan/OMC Lincoln demonstrated its sod cutter and Ferguson Fabrication ran a test of its sod extruder.

The manufacturers, constantly improving their equipment for the sod industry, showed efficiency in all areas — fuel, labor, and time. Observers said that some of these improvements would revolutionize the industry.

NURSERY

## Nurserymen's show faces heat and inflation

An optimistic attitude overcame the scorching temperatures and fears of inflation at the American Association of Nurserymen's 105th Annual Convention and Trade Show held in Kansas City, MO, July 12-16.

With Kansas City and other parts of the country facing temperatures of 105° to 110°, over 1,300 nursery men and women attended the convention activities. The activities included 77 exhibits represented by 63 firms; a tour to the Rosehill Garden Growing Field, which held a demonstration of nursery equipment for wholesale growers; a landscape/garden center tour covering successful garden centers in the city's suburbs; and a new program designed for juniors and teens to make this year's convention a family affair.

Fighting inflation and developing employee incentives were two of the primary themes explored in the general sessions.

Dr. Jerry Robertson of Ohio State University said that the market increase in the landscape industry, which was 12.6 percent per year since 1967, has only been 4.2 percent with inflation. Robertson said the production of nursery crops, landscape products, and services to the trade must increase at least at the rate of inflation.

One of the greatest effects on productivity is labor, according to Sidney Meadows, Flowerwood Nursery, AL. He said: "Because of the escalation in wages, there is a need in an escalation of output or we'll price ourselves out of the market. The labor costs are 25 to 35 percent of the sales dollar out of nursery stock."

Another important factor affecting labor relations is the performance standards, said Bill Studebaker, Studebaker Nursery, OH. "Performance standards improve employee morale and increase output. They also allow you to set piecework rates, if necessary, for even the various or less glamorous tasks."

John Flemer, Princeton Nurseries, Princeton, NJ, has combined years of study and experience on the problem. He said "compensation, communication, and concern" are the three main aspects in the management of workers, which is also an effective means to head-off

*Continues on page 113*

Sure, there's more to maintaining quality, disease-free turfgrass than a couple of fertilizer applications. But turfgrass scientists across the country are reporting that a fall application of IBDU (31-0-0) can produce turfgrass with better root development and less disease problems.

Dormant turfgrass plants continue to produce rhizomes and roots, even though vertical growth has stopped. During this time nitrogen should be made available to the turfgrass plant as carbohydrates are naturally accumulating. Thus, scientists say, the optimum timing for nitrogen applications is during the fall and early winter months.

IBDU (31-0-0) is ideally suited for dormant nitrogen fertilization. Because of it's slow release characteristics based on hydrolysis, IBDU releases nitrogen later in the fall and earlier in the spring promoting better rhizome and root growth. A fall fertilizer program using IBDU should produce healthier more vigorous turfgrass plants and reduce the severity of several turfgrass diseases.

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# GREENHOUSE RESEARCH EXPLORES HERBICIDE/TURF DISEASE RELATIONSHIP

**By Clinton F. Hodges,** Professor of Horticulture and of Plant Pathology, Iowa State University, Ames, IA

Postemergent herbicides are indispensable tools for the maintenance of high quality turf. Most temperate origin grasses show good tolerance to the auxin-like herbicides (2,4-D, 2,4,5-T, MCPP, dicamba) but absorption of the herbicides by tolerant grasses has aroused interest in the potential influence the herbicides may have on the physiology of the tolerant grass. Studies with various crops have examined potential interactions between herbicides in tolerant and non-tolerant species and the severity of diseases. Since most postemergent herbicides are synthetic growth regulating hormones, much interest also has been directed at their immediate effect on the growth and reproduction of plant pathogenic fungi. The purpose of this presentation is to summarize research conducted in our laboratory on the influence of postemergent herbicides (2,4-D, 2,4,5-T, 2,4,5-TP, MCPP, dicamba) on the biology of *Helminthosporium sorokinianum* (= *Drechslera sorokiniana)* and on the severity of leaf spot on Kentucky bluegrass.

### Herbicide Effects on the Pathogen

Leaf spot development induced by *H. sorokinianum* involves the life processes of both the pathogen and the leaf of the grass plant. The effect of any substance on the development of the lesion must be viewed relative to both living entities. The influence of 2,4-D, 2,4,5-T, 2,4,5-TP, MCPP, and dicamba show various stimulatory and inhibitory effects on the germination of *H. sorokinianum* conidia, growth of germ tubes, mycelium growth, and conidia production. Relatively high concentrations (10-3M) of these herbicides prevent the germination of conidia, but more dilute concentrations (10-4 to 10-12M) have no effect on germination. These observations suggest that the concentrations of 2,4-D, MCPP, and dicamba currently used for weed control in turf will neither inhibit nor stimulate the germination of *H. sorokinianum* conidia.

The most dramatic effect of 2,4-D, 2,4,5-T, 2,4,5-TP, MCPP, and dicamba on *H. sorokinianum* is stimulation of growth of conidia germ tubes after germination. The growth of germ tubes may increase 2X to 3X in response to various concentrations of each herbicide. Only 2,4,5-TP demonstrates some inhibition of germ-tube growth at higher concentrations. The significance of germ-tube stimulation relative to infection of leaves and disease development is unclear. It is well established that stimulation of the growth of a pathogen is not necessarily related to its ability to increase disease.

Most of the commonly used postemergent herbicides will stimulate mycelium growth of *H. sorokinianum* in culture. MCPP and dicamba are stimulatory in very dilute amounts. 2,4-D shows stimulation at high concentrations. The importance of mycelium stimulation relative to disease development is unknown. Such stimulation could, however, be of some importance in aiding *H. sorokinianum* colonize dead grass tissue.

The influence of postemergent herbicides on the ability of *H. sorokinianum* to produce spores is mixed. 2,4,5-T and MCPP inhibit sporulation at most concentrations. 2,4-D, 2,4,5-TP, and dicamba show some stimulation of sporulation. These observations could be important to the ability of *H. sorokinianum* to produce spores on dead grass tissue; herbicide stimulated or inhibited spore production could subsequently influence the number of potential infections.

### Herbicide Effects on Leaf Spot Development

Research conducted in our facilities over the last six years has established that the postemergent, synthetic auxin-like herbicides (2,4-D, 2,4,5-T, 2,4,5,-TP, MCPP, and dicamba) can function in a host-pathogen-herbicide interaction involving *H. sorokinianum* and Kentucky bluegrass, to increase or decrease leaf spot severity. Kentucky bluegrass exposed to 2,45-T, MCPP and dicamba by means of leaf sprays or soil applications and then infected with *H. sorokinianum* show a 2X to 3X increase in leaf spot severity. Plants sprayed with 2,4-D and then infected generally show no change in disease development, but 2,4-D applied to the soil increases disease severity markedly. 2,4,5-TP applied to Kentucky bluegrass as a spray or as a soil drench inhibits leaf spot development at higher concentrations and stimulates development at lower concentrations.

> The most dramatic effect on leaf spot development is stimulation of the growth of conidia germ tubes

Recent studies in our laboratory have established that herbicide stimulation of *H. sorokinianum* leaf spot on Kentucky bluegrass is associated with the aging process of the leaves. Leaf spot normally becomes more severe on each older leaf of the shoot; when the shoot is exposed to 2,4,5-T, MCPP, or dicamba and infected the increase in disease is least severe on the youngest leaves and most severe on the older leaves.

### Mechanism of Herbicide Stimulated Leaf Spot

Existing plant science literature suggests that auxin-like herbicides may function to retard or to stimulate the aging process in leaves. Such observations may provide some insight into the host-pathogen-herbicide interactions resulting in more severe leaf spotting of Kentucky bluegrass. It seems that in a very general way, auxin-like herbicides introduced into young leaves, where cell division and expansion is occurring, may help maintain this youthful condition; however, introduction of the

same auxin-like herbicide into fully developed leaves where cell division and expansion have ceased, and where normal aging processes have started, may increase the rate at which the leaves age. It is known that leaf spot severity increases on each older leaf of the shoot; i.e., leaf spot is enhanced by the aging processes of each older leaf. Therefore, when the two oldest fully developed leaves of the shoot are exposed to auxin-like herbicides they may age at a faster rate and, if infected, the disease will increase in severity. This concept is less clear relative to disease development on the youngest, expanding leaves. The increase in leaf spot severity on the youngest, visible leaf of Kentucky bluegrass exposed to auxin-like herbicides is less than that on each older leaf; in fact, 2,4-D will not increase the disease on the youngest leaf. The youngest leaf often shows the same or slightly higher disease levels in response to the auxin-like herbicides. The two youngest leaves are in a very youthful condition and as such do not respond to infection with extensive yellowing and blighting. Hence, the youthfulness of these leaves retards extensive disease development; the promotion of disease on these leaves by the herbicides is minimal. The slight elevation in disease is not explainable relative to aging because in young, expanding leaves the auxin-like herbicides would probably be youth promoting. The greater increase in disease on the second oldest leaf still suggests a herbicide-aging interaction that increases disease.

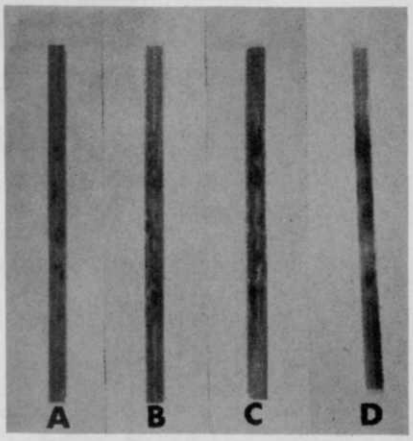
### Significance of the Herbicide-Leaf Spot Interaction in the Field

Observations on the stimulation of *H. sorokinianum* leaf spot on Kentucky bluegrass by postemergent, auxin-like herbicides have been made under the controlled conditions of greenhouse and growth chamber studies. To date, experimental evidence from field studies has not been obtained. The leaf spot symptoms produced in response to herbicides in greenhouse studies, however, are not unlike those observed in the field during late spring, summer (with irrigation), and fall to early winter. It is probable, therefore, that herbicide stimulation of leaf spot may occur in the field. Such stimulation probably would be erratic in its occurrence; i.e., the herbicide, pathogen, and proper moisture and temperature must occur simultaneously to increase the severity of leaf spot. Early spring applications of herbicides probably would have little effect on leaf spot development because of the lush, youthful condition of the leaves; with normal senescence, however, in late spring and early summer the herbicides may be a factor in increasing leaf spot severity, especially with irrigation or during a wet season. Preliminary studies suggest that increasing temperature from 72° to 86° will increase the yellowing and blighting caused by leaf spot on plants exposed to herbicides. This suggests that on irrigated Kentucky bluegrass auxin-like herbicides could have a substantial effect on promoting leaf spot damage during periods of warm weather. Auxin-like herbicides might be most promotive of leaf spot in fall and early winter when shorter daylength, and the herbicides may contribute to the rate at which leaves age and subsequently predispose them to more severe leaf spot development.

All factors must occur simultaneously to increase severity

#### Acknowledgements

I wish to thank the O.J. Noer Research Foundation for financial support of much of the research from which this abstract is derived. **WTT**




**Severity of leaf spot** increases on each older leaf of a Kentucky bluegrass shoot in response to 2,4-D, 2,4,5-T, MCPP, and dicamba. A. Youngest leaf shows small brown lesions with minimal yellowing of tissue around lesions. B. The second youngest leaf shows enlarged brown lesions and an increase in yellowing of tissue around lesions. C. Next to the oldest leaf on the shoot showing enlarged brown lesions and yellowing that surrounds and interconnects lesions. D. The oldest leaf of the shoot shows very large lesions and extensive yellowing of the entire leaf. Leaf spot severity normally increases on each older leaf, but the herbicides increase the level of disease beyond what normally occurs.

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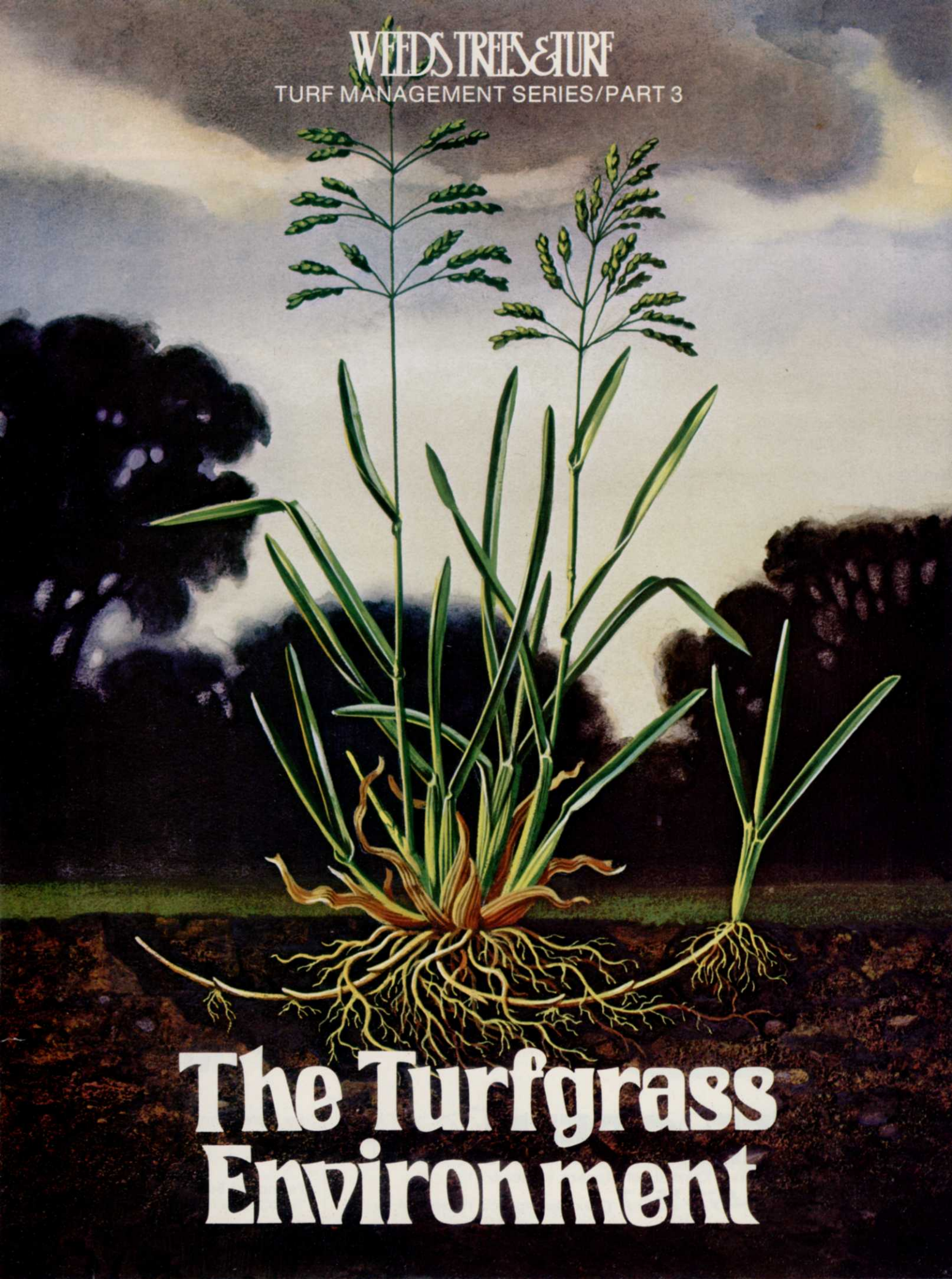
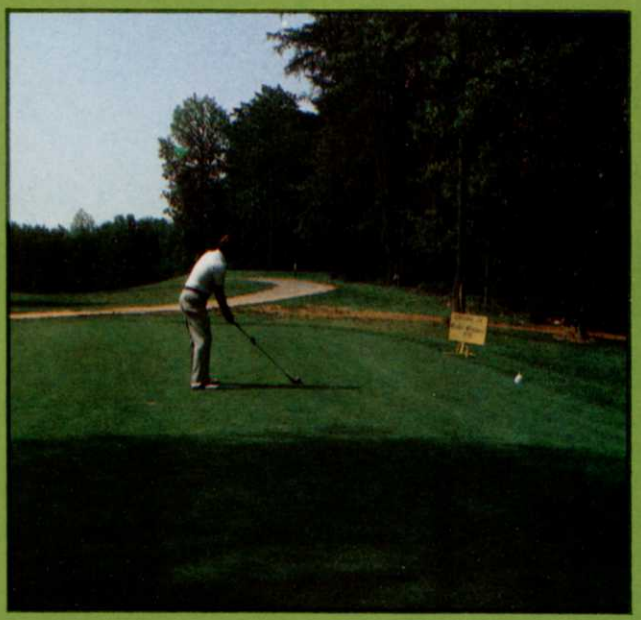


# The Turfgrass Environment

# Pair for the Course



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# SITE CONSIDERATIONS

Progress in turfgrass science provides today's lawn installers with high quality turfgrass seed and sod. The biggest risk has therefore become the readiness of the site for the seed or sod.

The site must provide the physiological needs of the desired turfgrass. The purpose of this article is to describe these needs and how to alter a site to supply them.

No professional lawn installation should proceed without a thorough evaluation of the site and a soil test. The results should be discussed with the customer with a simplified explanation of the needs of the desired turfgrass. Geographically impractical turfgrass species should be eliminated and the customer's desired level of maintenance should be established. Share your knowledge of improved turfgrasses. There is a good selection of both seed and sod so the customer can have a custom lawn. Today, a quality lawn is a sales tool in real estate. The residential customer can have an individualized lawn in addition to a sales advantage.

The commercial customer installing a new lawn at its building site is a tougher challenge. If the landscape architect is not up on improved turfgrasses, it takes a strong salesman to get improved varieties in the specifications. Too many industrial sites, multi-family housing developments, and shopping areas are seeded or sodded with outdated or cheap turfgrass varieties. The low bid process encourages this unless the improved turfgrasses are specified during bidding.

The scope of commercial jobs also encourages the use of hydraulic seeding with higher seed rates. Hydraulic seeding has grown in popularity as the least labor intensive way to seed all types of lawns.

**Soil samples** *should be taken for every site and tested for texture, nutrients, and pH.*

General contractors often want the lawn installation handled quickly and simply. This, however, is not always the best for the site. The owner must clearly specify his desire for quality turf by the best methods available. To achieve a quality lawn, some hand seeding and sodding is usually required. The hydraulic seeder is a great tool, however, research on the use of hydraulic seeding for fine turf is limited.

The health of a turfgrass plant is entirely dependent upon its environment, both above and below the soil surface. Once the seed has germinated, that plant must adapt to its fixed position or die. Man has the knowledge and ability to amend both above and below surface environments so that the turfgrass plant has optimum growing conditions. The best time to make the changes is before planting or sodding. If the basic needs of the turfgrass are provided, the plant will exercise its own ability to adapt to the stress of heat, drought, or wear. Turfgrass selection and breeding have provided turfgrasses that exhibit greater ability to adapt to stress. That does not reduce the need for site preparation in the case of fine turf.

Site preparation can be more than soil preparation. It could include thinning tree cover, installation of irrigation or drainage, filling low spots, changing slopes, installation of anticompaction or erosion control netting, or even installing a sidewalk to direct foot traffic off the lawn. Any change which improves the turfgrass environment is considered site preparation.

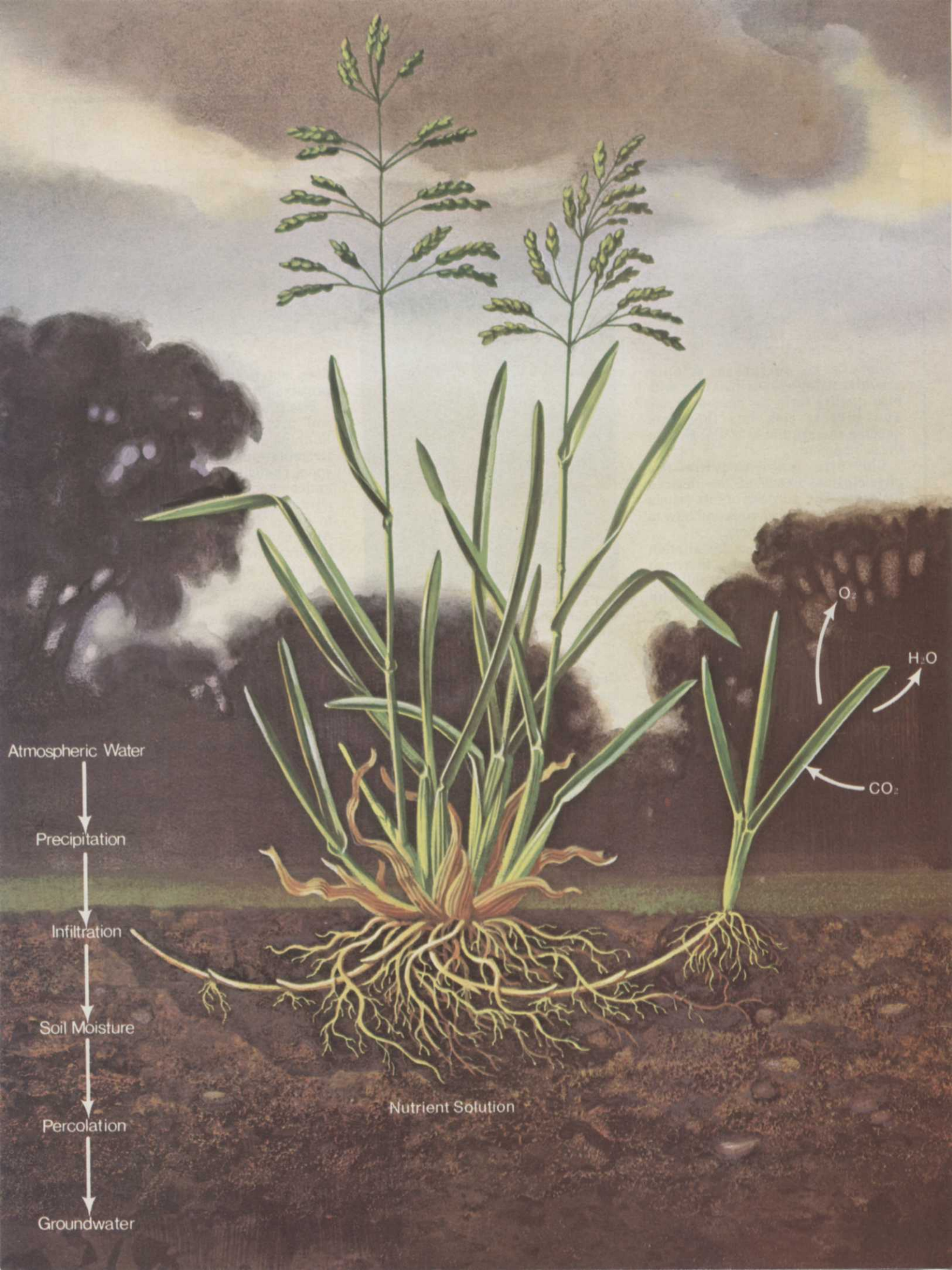
The environment must provide all essential requirements for the life processes of the turfgrass. These include light, water, numerous chemical elements, and air (gases). The environment should also include preventative conditions, such as air circulation, drainage, relatively neutral pH, minimal thatch, and few insects.

All chemical reactions are temperature dependent, require energy, and can be influenced by chemical balances, such as acidity, cation exchange capacity, and the presence of needed elements. Understanding basic chemical reactions of plant growth helps clarify the need for site preparation.

The most important process is photosynthesis. In photosynthesis, carbon dioxide from the air and water are converted to organic carbon compounds which are used in plant growth. Light energy, absorbed by the chlorophyll in the plant, powers this reaction. Lack of carbon dioxide is rarely a problem, but water and light can be lacking very easily. Excessive shade or drought are common problems in turf areas.

The carbohydrates produced by photosynthesis are either utilized to power other growth and maintenance reactions or stored.

One major use of carbohydrates is respiration, in which the car-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$H_2O$
$CO_2$

bohydrates and oxygen react to release energy and to produce carbon dioxide and water. The plant uses the energy released to power other vital life processes. Respiration is increased by higher temperatures or nitrogen fertilization.

It is important that the plant maintain a reserve of carbohydrates for use when plant needs exceed carbohydrate production by photosynthesis. Excessive respiration, caused by overfertilization can deplete these reserves. Storage is greatest on sunny, cool days, especially just prior to onset of winter dormancy. Nitrogen fertilization at this time is discouraged.

One reason nitrogen encourages respiration is its part in protein synthesis. Nitrogen is a key element in amino acids, a major component of protein. Protein is the structural material of cell walls and the plant's genetic code. Abundant nitrogen stimulates growth and the respiration to support it.

Many other elements play a part in the various biological reactions of plant existence. (See table) They supply needed components for physiological processes. Specifically, potassium and phosphorus are critical for a good seedbed because they effect root health. The ability of rhizominous and stoloniferous turfgrasses to spread is also dependent upon adequate levels of potassium. Low potassium levels encourage carbohydrate reserve depletion. Potassium does leach, especially in sandy soils and needs to be replenished. Phosphorus is relatively stable in soil and is not prone to leaching. Consequently, phosphorus should be mixed with the topsoil.

Other important elements are calcium, sulfur, magnesium and a score of other minor elements. Calcium encourages root growth, effects the cation exchange capacity of the soil, and often improves general soil structure. Sulfur is an important part of protein synthesis, it also can be used to acidify alkaline soils. Magnesium is an important part of chlorophyll and effects the green color of turfgrass stands. It is also part of protein synthesis and influences the use of available phosphorus in the plant.

Minor elements include iron, zinc, copper, chlorine, boron, molybdenum, and manganese. Iron assists in the production of chlorophyll and will deepen the color of turf. Most minor elements can be unavailable to plants if soil is too acidic or alkaline. The role of some of the

| Element | Chemical symbol | Importance in plant function |
|---|---|---|
| Nitrogen | N | The nitrate form is reduced to amino acids which are used to synthesize proteins, such as the structural protein of cell walls. Important in formation of nucleic acids which control genetic code of the plant. Also important in synthesis of coenzymes, vitamins, hormones, and pigments. |
| Potassium | K | Important in the glycolic pathway, one of four reaction sequences in the respiration process which converts glucose produced by photosynthesis into plant energy. Functions primarily as an enzyme activator. |
| Phosphorus | P | Also important in formation of nucleic acids. Is a constituent of phospholipids, which with proteins, constitute membranes which maintain structural integrity of plant cells. Important in organic compounds which provide energy for chemical reactions. |
| Sulfur | S | A constituent of certain amino acids and protein. Also found in coenzymes for lipid (fat) and carbohydrate metabolisms. |
| Calcium | Ca | Important in developing cell structure and permeability properties of membranes. |
| Iron | Fe | Essential for chlorophyll synthesis |
| Magnesium | Mg | An essential constituent of chlorophyll. Seems to function by binding together subunits which make up ribosomes which synthesize proteins. |
| Boron | B | Unknown. Suggested that borates prevent excess phenolic acid production. Phenolic acids accumulate in boron deficient plants. |
| Manganese | Mn | Formation of oxygen in photosynthesis. Specifically required for action of some enzymes. |
| Copper | Cu | Found in enzymes required for respiration and photosynthesis. |
| Zinc | Zn | Found in several enzymes essential to respiration and nitrogen metabolism. |
| Molybdenum | Mo | Found in enzyme for $N_2$ fixation, and enzyme essential for reduction of nitrates ($NO_3$) to ammonia. |
| Chlorine | Cl | Activates oxygen production system of photosynthesis. |
| Sodium | Na | Required by certain halophytic (salt-loving) plants. |
| Silicon | Si | Required by some grasses and sedges for cell wall formation. |

minor elements is not clearly understood. Sandy and alkaline soils may require addition of minor elements.

The purpose is not to give a lesson in chemistry, but to show those things that a turfgrass plant requires from its environment. The next step is to identify site conditions which either permit or restrict the supply of these needs. Since soil is the medium for most of these needs, it is the best place to start.

**Soil**

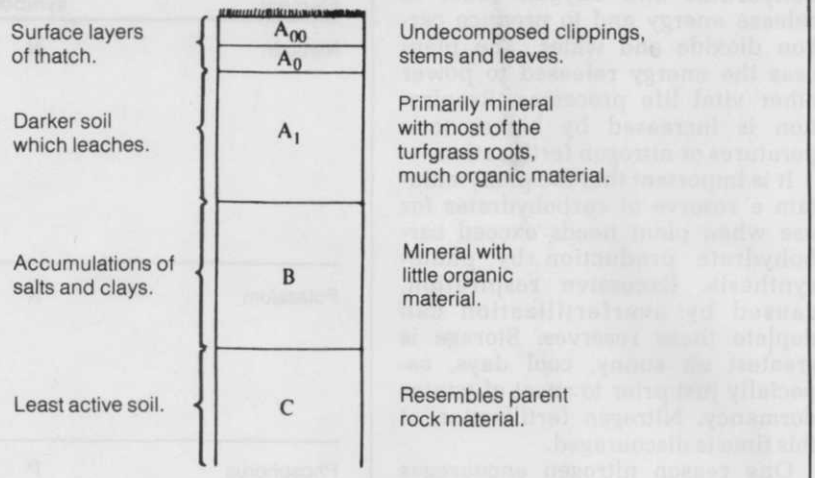
The goal in site preparation is to provide a six to eight inch layer of soil that has desirable texture, structure, and chemical balance. The components of the soil determine these characteristics. Soil amendment may be needed to establish a suitable rootzone for the turfgrass.

Soil is layered. The primary concern is the few inches of topsoil, but lower layers effect drainage, upward movement of water, and chemical activity. Special care to all layers of soil is given during construction of golf greens and other athletic fields. On large areas where lower layers may pose problems but the scale makes changes impractical, special attention should be given to maintenance needs, such as topdressing, aerification, fertilization, and installation of drainage and irrigation systems. The purpose is to counterbalance the effects of an inferior soil.

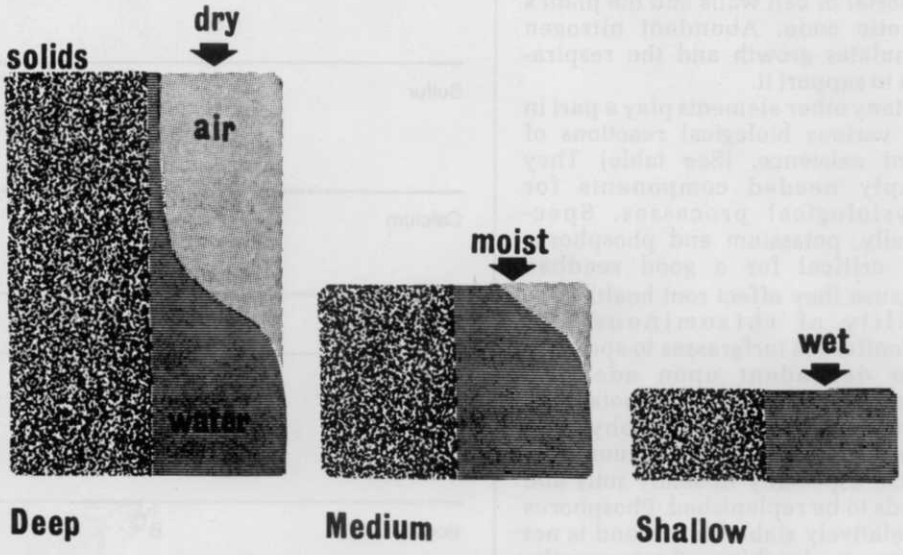
The typical soil of an area is derived from the parent material which may have been the bottom of a lake, a glacier, a volcano, or other mineral or organic material. Other factors influencing soil content are the climate of the area, the period of time during which the soil developed, the vegetation that had grown there previously, and the topography of the area. All these factors combined resulted in the soil characterisitics of any area.

Soils are classified by type or combination of types, including sand, silt, and clay. (See diagram). These identify textural characteristics of the soil. Soils are also classified by structure based upon the shapes of individual groups of particles, or aggregates, in the soil. The size of the aggregates is also a factor in seedbed preparation. Pea-sized aggregates are preferred.

The texture and structure of a soil has a great effect on drainage, movement of chemicals in the soil, upward movement of water (capillary action), rooting ability, and presence




**Layers or horizons of soil** *The A horizon should be six to eight inches deep and of appropriate texture, pH, nutrient content, and drainage.*




**Depth of topsoil affects retention of water** *following irrigation or drainage.*

of needed gases in the soil. Loam soil is actually a combination of sand, silt and clay.

Another way to classify soils is as mineral or organic. The organic matter content of mineral soils is less than ten percent, whereas organic soils contain more than 20 percent organic matter. Organic soils are preferred where possible. Michigan sod growers switched from mineral soils to organic soils as part of their growth in the 60's. If the organic matter is only slightly decomposed the soil is termed peat. If the organic matter is well decomposed the soil is termed muck.

Soils with large amounts of undecomposed organic matter need the assistance of bacteria, protozoa, nematodes, algae and fungi for breakdown. Poorly drained soils discourage these organisms from doing their job. These organisms also are essential for thatch decomposition and breakdown. Decomposition is also related to the pH of the thatch and soil. Alkaline or acidic soils can prevent the breakdown of thatch and cause problems associated with thatch buildup.

The composition of the soil effects water accumulation and drainage. Sand soils do a poor job of holding water. However, they have the advantage of aiding drainage when added to other soils. Clay soils hold water but this water may not be available to the plant roots. Silt soils retain water well but also tend to compact easily. The pore space between soil particles determines the ability of the soil to hold and pass water. The organic matter content of the soil also aids in water retention. The ability of the soil to let water in

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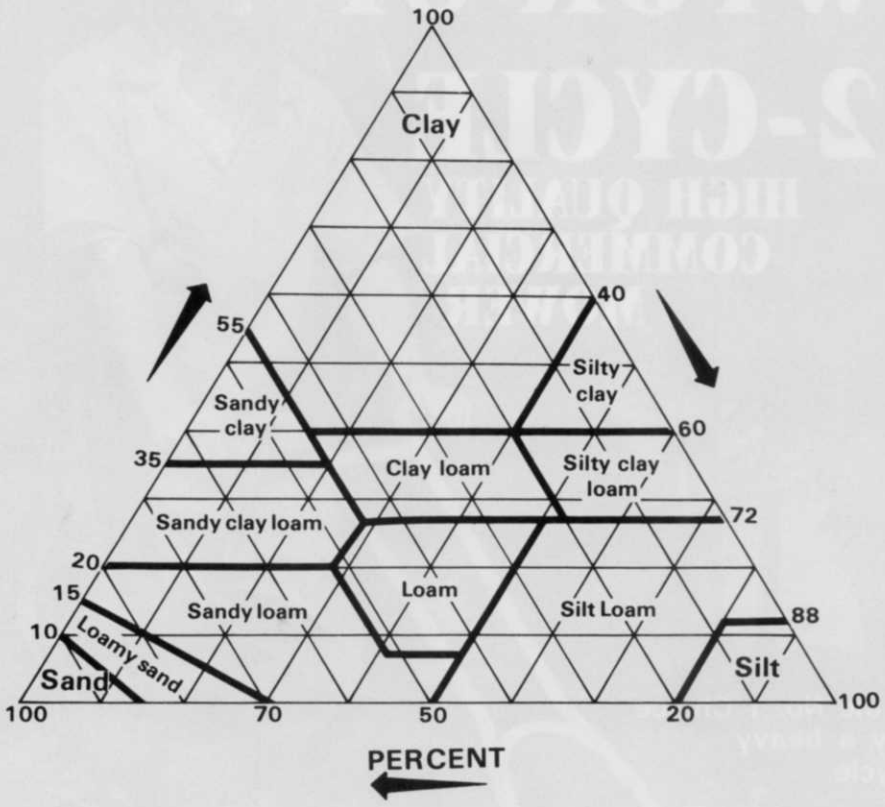



**Texture is measured** *by the percentages of the three basic mineral components, clay, silt, and sand.*

is called infiltration. If soils are compacted, pore space is limited and water will not flow into the soil easily. Water can be treated with wetting agents to reduce its surface tension and allow for easier entry.

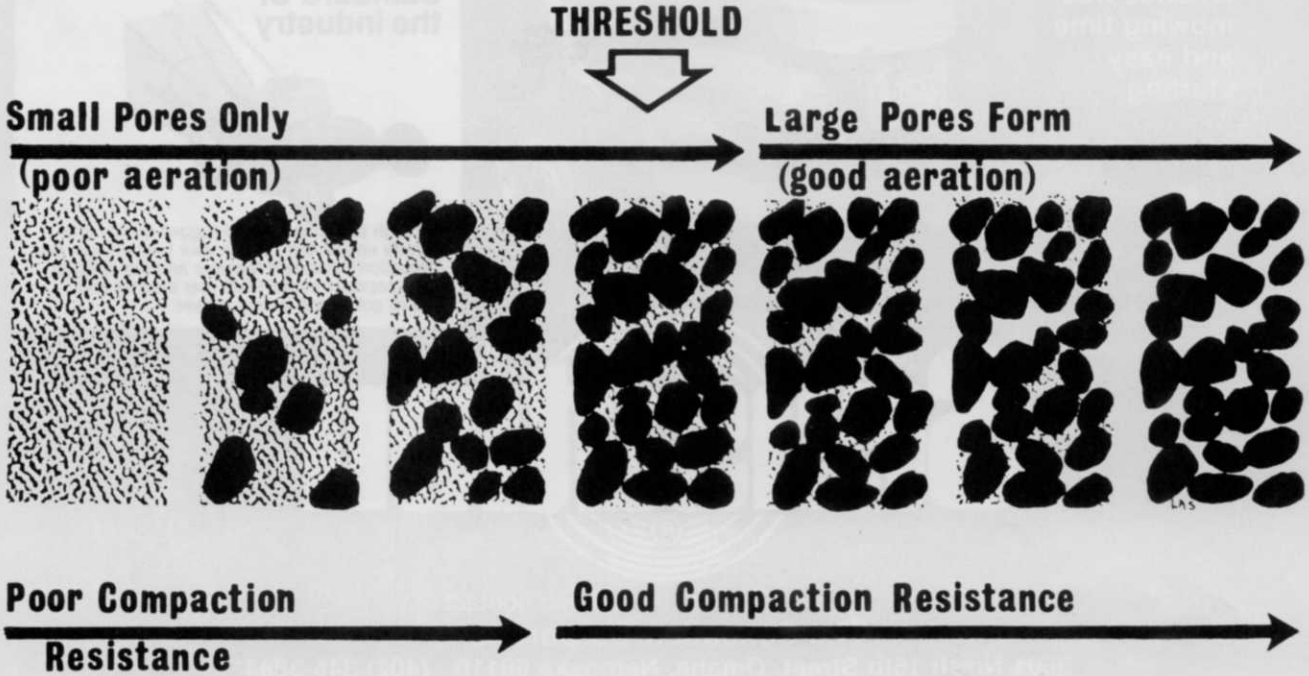
The ability of the soil to allow water to pass through is called percolation. If soil layers are significantly different in texture, water movement downward can be hindered. If surface water is applied faster than the soil can take it in or let it flow through, puddling or runoff will occur.

The ability of the soil to hold water is closely related to its ability to hold needed gases. Many of the things that prevent water retention hinder soil aeration, such as compaction and lack of organic matter.

Water and air compete for the same space at times. Poor drainage inhibits soil aeration if water occupies all pore space. Turfgrass roots need oxygen to carry out respiration. Without the oxygen, the ability of the plant to power essential processes is severely restricted.

One final area of consideration for soils is the chemical balance. This is a more complicated subject concerning pH, cation exchange, and salinity. An imbalance of any of these can hinder the plant's health.

pH is a measure of the hydrogen ions in a solution. The more acid the soil is, the lower the pH will be. The




**Porosity of soil** *determines compaction resistance as well as drainage and water and air retention.*

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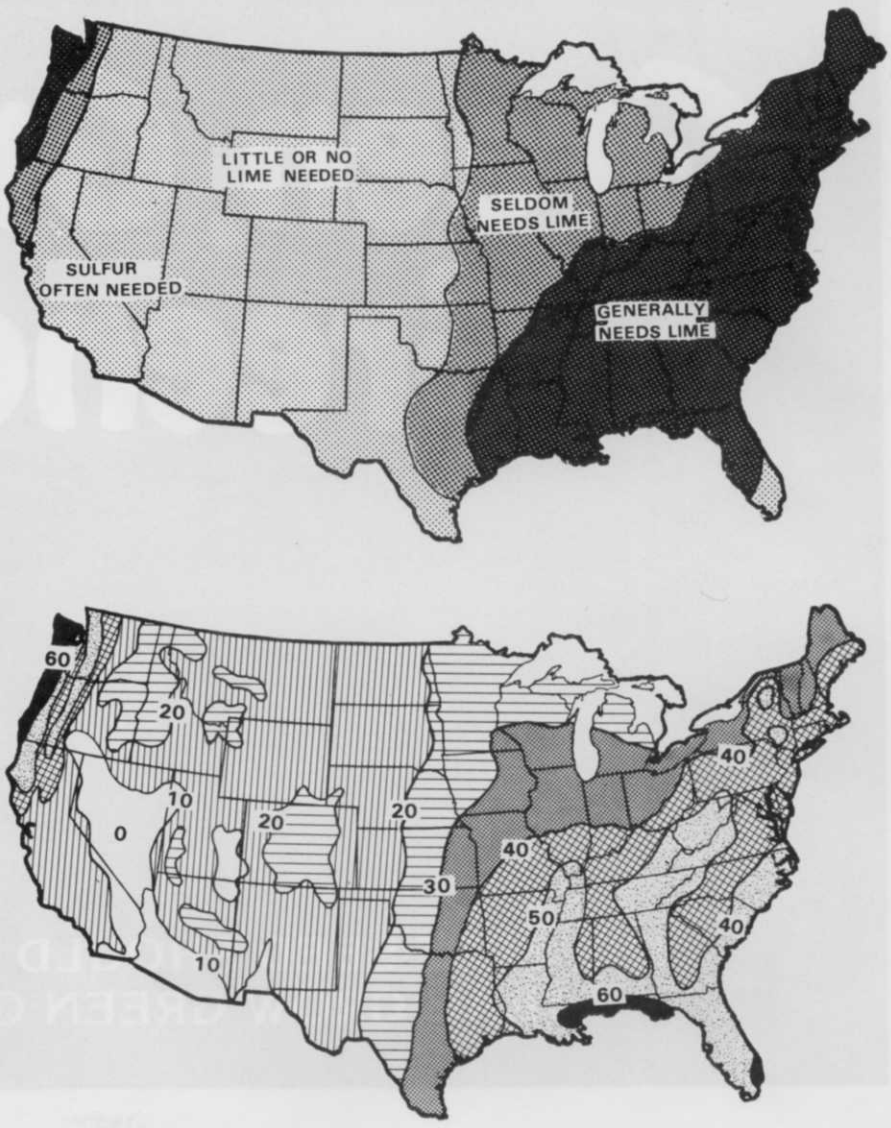
more alkaline, the higher the pH. The number 7 is considered neutral and is also the optimum pH for growing turfgrass. Many things can cause soil pH to change; irrigation water of a different pH and materials containing sulfur such as ammonium sulfate. Soils containing large amounts of clay and organic matter tend to be acid. Periodic applications of limestone may be necessary for these soils. Excessive acidity reduces the amount of available phosphorus in the soil, reduces the activity of beneficial soil organisms, and increases the ionic concentration of potentially toxic minerals such as aluminum and manganese. Secondary effects include poor rooting, increased thatch accumulation, and reduced turfgrass vigor. Due to the effect on rooting, pH should be checked prior to seeding or sodding and corrected. Acid rain is a possible source of acidity.

Alkaline soils are usually associated with areas that have saline ground water, low rainfall, or are waterlogged. Overuse of lime can cause alkaline soil conditions. Alkaline soils restrict the utilization of iron, manganese, copper, zinc, and boron by turfgrass. Sulfur or fertilizers containing sulfur can be used to neutralize alkaline soils.

Saline soils are associated with areas of low rainfall where soluble salts have not been sufficiently leached out over time. They tend to be present in the ground water making irrigation with it little help. Irrigation with collected rainwater or use of salt tolerant turfgrasses are the only practical remedies. In the same general category are sodic soils which contain high levels of soluble sodium. Sodium has a detrimental effect on soil structure causing the breakdown of aggregates and clay particles. Application of gypsum can improve sodic soils.

The most complicated phenomenon of soils is the cation exchange capacity. Basically, chemical reactions involve the attraction of positively charged molecules (cations) to negatively charged molecules (anions). Plants require positively charged molecules of elements to carry out basic processes, such as calcium and potassium. The plant depends on the soil to hold these cations until it can use them. The ability of the soil to exchange a cation of its own for one of benefit to the plant is termed cation exchange capacity. The type of soil, texture, and organic matter content effect cation exchange capacity. Addition of organic matter increases the cation exchange capacity of the soil. The higher the cation exchange the better the soil holds onto valuable nutrients. Leaching is reduced in these soils.




**Acidity and alkalinity** *of regions in the U.S. (top) is closely related to average rainfall (bottom). Nutrient availability changes with soil pH.*

There is no one preferred CEC. It varies according to the type of clay, organic content, and other components. If correction was advised, addition of organic matter would be the likely solution.

To provide the best environment for seed or for sod rooting the soil should contain appropriate nutrients, be neutral or slightly acid (6.5 pH), have an acceptable CEC, contain aggregates by cultivation and moderating or eliminating sodic conditions, and organic content of at least 20 percent. Best results with sod rooting are obtained by purchasing sod grown on approximately the same type of soil as the site. Most sod is grown on muck soil. Decomposed organic material is preferred for amendment since decomposition of the organic matter consumes nitrogen that could be utilized by the turfgrass. Material should be composted before use.

To improve heavy clay soils, coarse sand can be mixed with the clay and organic matter to lower the clay content to 75 percent if possible. Calcined clay will also contribute to better water characteristics of soils. Sand and calcined clay can improve silty soils as well.

Sandy soils require the addition of clay and organic matter. Clay content of at least five percent is

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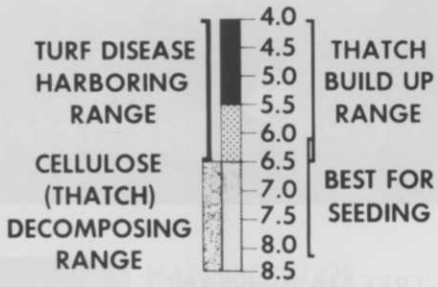
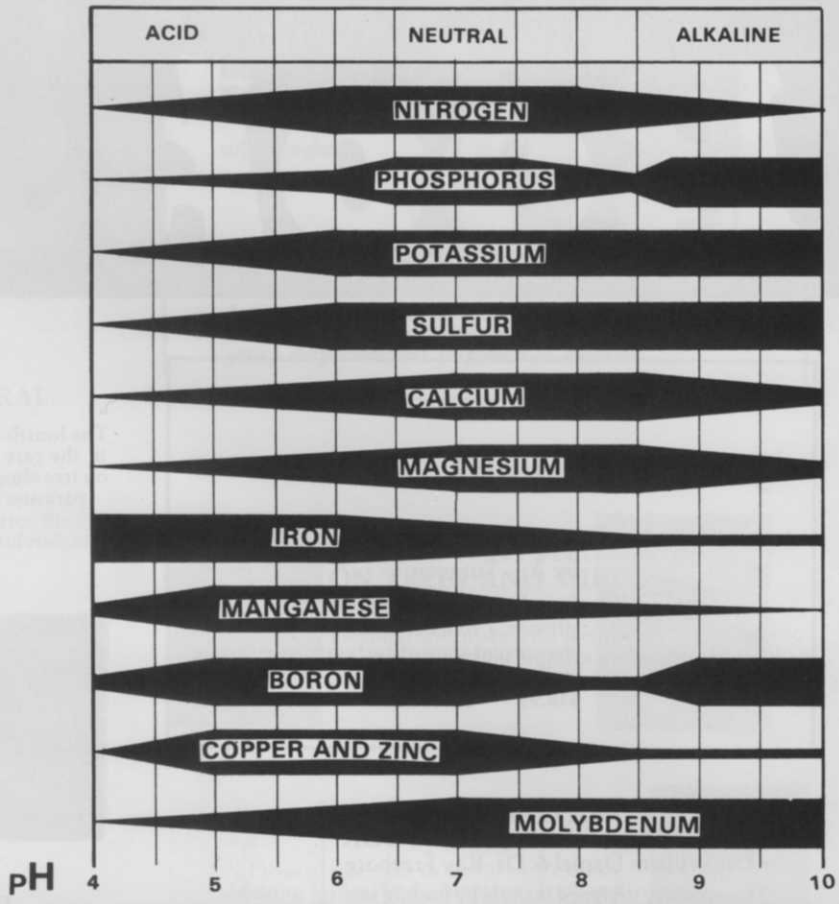
**Disease susceptibility and thatch buildup** *can be reduced by adjusting pH.*




desired. Fine sand content should be reduced as much as possible.

The perfect soil has never really been determined. The United States Golf Association recommends that pore space should be in the range of 40 to 55 percent. Since the size of sand, clay aggregates, and organic material varies, arriving at one combination is impossible. California research has indicated a mixture of 85 percent sand (.25 mm and bigger), 7.5 percent clay, and 7.5 percent peat is successful. That is an impractical amount of sand in the case of soil modification.

*Continues on page 97*

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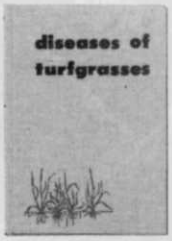


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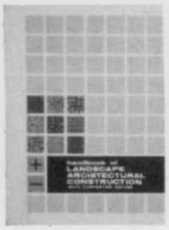

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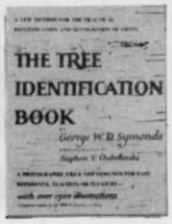

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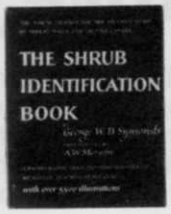

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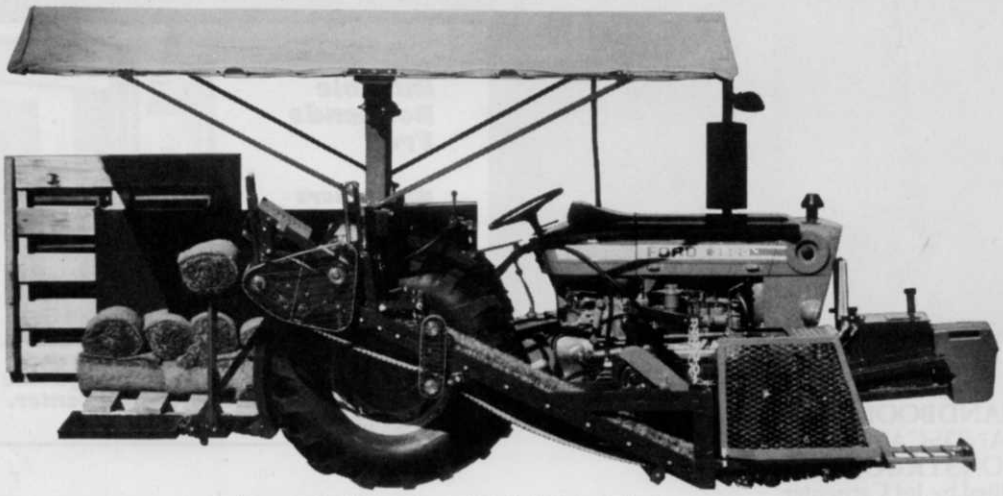

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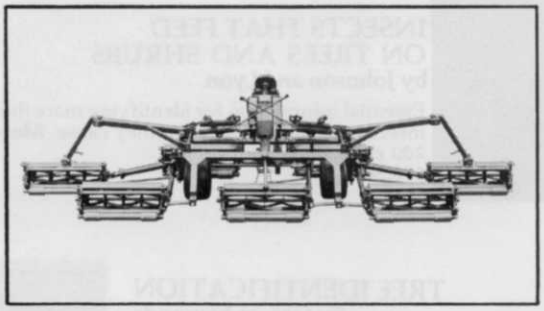

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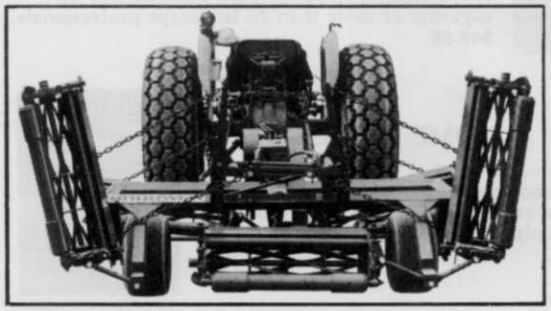

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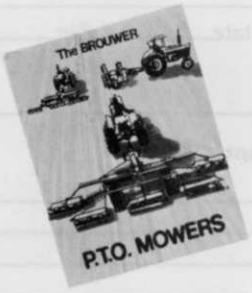

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# 1981

# Manager's Guide to Equipment, Chemicals, Supplies and Distributors.

WEEDS TREES & TURF

# 1981 Manager's Guide to Equipment, Chemicals, Supplies and Distributors

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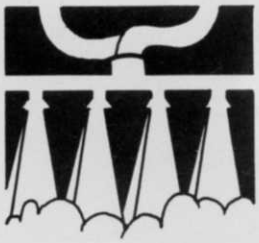

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Where to find chemicals and supplies in every state 90

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The Turf Trial results speak for themselves. **Pennant** is a champion. Rigidly controlled, comparative testing involving **Pennant** and competing varieties of perennial ryegrasses were conducted by turf experts across a broad region of the U.S.—the Pacific Northwest, the Southwest, the Northeast.

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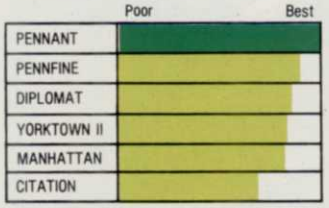
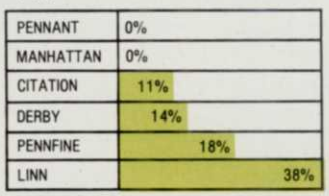
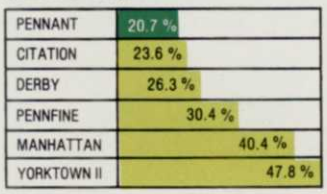
**Warm and cool season average turf score, Southern California first-year tests, 1979.**



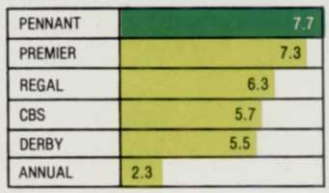

**Percent winter injury. Adelphia, N.J. March 1978. (10 of 26 varieties tested showed no significant injury.)**




**Pennant was best among 12 varieties tested for red thread disease (Corticium fuciforme) in 1-year average, 1979-80. Western WA. (Low score = Best).**

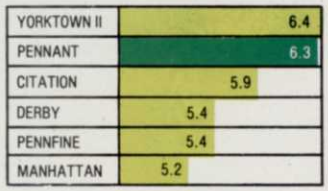



**Average Turf Performance scores, February 1980. Southern Arizona turf overseeding on Tifgreen Bermuda. Sixteen entries seeded October 1979. (10 = Best).**

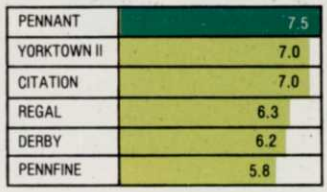



*Plant variety protection pending and anticipated

**Turf performance scores. North Brunswick, N.J. 1975-78. (9 = Best).**




**Reaction to brown patch disease (Rhizoctonia), Adelphia, N.J., 1978. (9 = least damage)**

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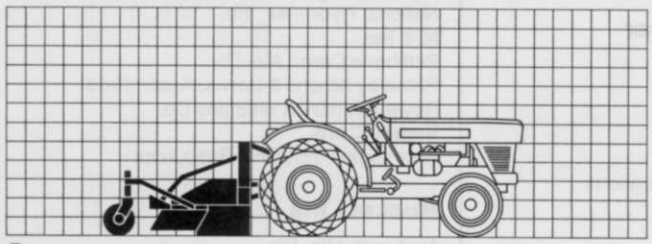

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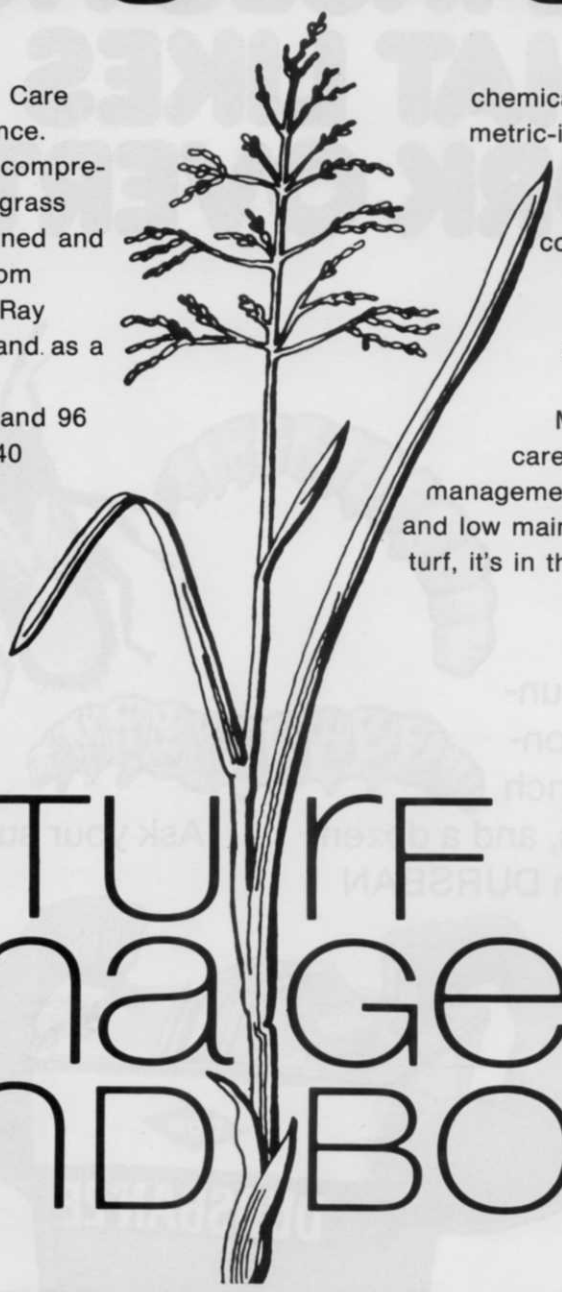

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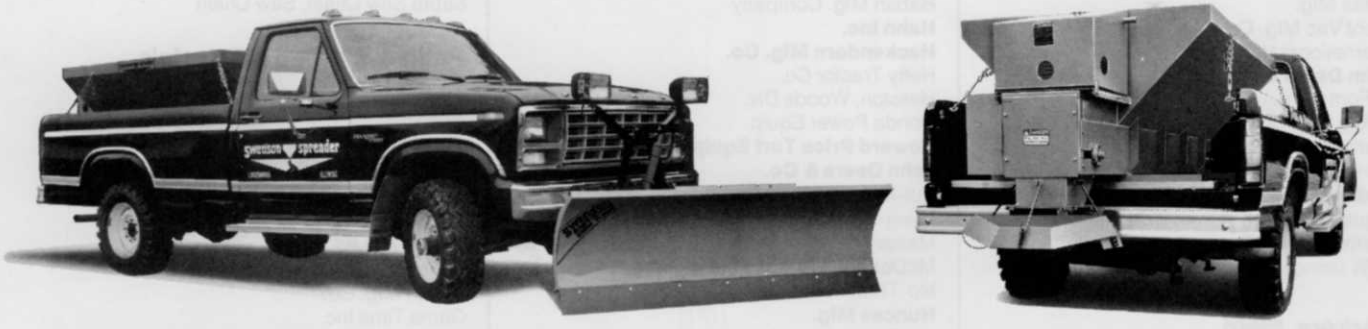
Weathermatic, Div. of Telsco Ind.

### Lighting Systems

Appleton Elect. Co.
Architectural Area Lighting Co.
Centrecon Inc.
Crouse-Hinds Co.
Emerson Electric
General Electric Co.
Intermatic, Inc.
Johns-Manville
Little Giant Corp.
McGraw Edison Co.
Millerbernd Mfg. Co.


# The Swenson Pickup Package.

**Heavy duty ice and snow control for light and medium duty vehicles.**




When street and highway maintenance departments want top quality ice and snow control equipment, they come to Swenson. Now, you can too. The Swenson Pickup Package has been trimmed down in size. But we didn't cut corners on quality.

In front, there's an Easy-Hitch snow plow. Rugged and maneuverable, it mounts or dismounts in minutes. The driver has complete in-cab control. And it's custom engineered to fit the newest '80 and '81 trucks.

In back, there's a PV-300 V-box material spreader. It mounts and stores as a single unit. Capacity is over 1½ yards. And it's powered by either an auxiliary gas motor or the truck's hydraulics.

Whether you need a plow, a spreader, or the complete package, now you can insist on Swenson quality. Call today for the name of your nearest dealer.

**Swenson—the tough choice.**

swenson spreader

SWENSON SPREADER COMPANY • SUBSIDIARY OF DICKEY-john CORPORATION
**P.O. BOX 127 • LINDENWOOD, ILLINOIS 61049 • 815/393-4455**

Write **124** on reader service card

## Equipment
*continued*

Muscatine Lighting Mfg. Co.
Spring City Electrical Mfg. Co.
Street Lighting Equip. Corp.
Welsbach Lighting Inc.
Wide Lite

### Litter Receptacles

Clean City Squares
Columbia Cascade Timber Co.
Landscape Forms
Leisure Craft Inc.
Mexico Forge-Kilgore
Milroy Mfg. Inc.
Plastic Ommium Inc.
R. J. Thomas Mfg. Co.
Rosenwach Inc.
United Metal Rec. Corp.

### Loaders

**Allis-Chalmers**
American Coupler Systems, Inc.
Clark Equip. Co.
**Dynamic Industries Inc.**
Erickson Corp.
E-Z-Go Div. of Textron
**FMC Corp., Bolens Div.**
Ford Motor Co., Tractor Operations
Giant Vac Mfg. Co.
Hydra-Mac, Inc.
International Harvester
JCB Inc.
**J I Case, Davis Div.**
**John Deere & Co.**
**Kubota Tractor Corp.**
Massey-Ferguson
Owatonna Mfg. Co., Inc.
R & R Prod. Inc.
Schwartz Mfg.
Sperry New Holland
Wheel Horse Prod.
White Farm Equip.

### Log Splitters

Didier Mfg.
Giant Vac Mfg. Co.
International Harvester
**John Deere & Co.**
LaFont Corp.
Lindig Mfg. Corp.
**Morbark Ind. Inc.**
Northeast Industries, Inc.
**Olathe Mfg. Co., Inc.**
Piqua Engr. Inc.
**Vermeer Mfg. Co.**
W-W Grinder Inc.

### Markers, Field

Carlson Co.
Decratrend
Fox Valley Marking Systems
Richway Industries Ltd.
Trusco Mfg. Co.
Unimasco Inc.

### Measuring Wheels

Rolatape Corp.

### Mist Blowers

F. E. Myers Co.
**FMC, Agric. Mach. Div.**
**HMC, Green Machine**
Root Lowell
**Solo Inc.**

### Mowers, Flail

Bomford & Evershed Ltd.
Brillion Iron Works
**Excel Industries**
**FMC, Agric. Mach. Div.**
Ford Motor Co., Tractor Operations
Hefty Tractor Co.
Hesston, Woods Div.
International Harvester
**John Deere & Co.**
**Mathews Co.**
**Mott Corp.**
Tiger Corp.
Turner International Ltd.
**Vemco Corp.**

### Mowers, Reel

**Brouwer Turf Equip. Ltd.**
**Cushman/OMC-Lincoln**
Dayton Electric Mfg. Co.
National Mower Co.
Roseman Mower Co.
Roxy-Bonner Inc.
**Toro Co.**

### Mowers, Rotary

**Allis-Chalmers**
Ariens Co.
Atlas Tool Mfg. Co.
Billy Goat Ind.
**Bolens Div. FMC Corp.**
**Bunton Co.**
Bush Hog Implements
Continental Belton Co.
Dayton Electric Mfg. Co.
**Excel Industries**
**FD Kees Mfg. Co.**
Flymo Co.
**FMC, Agric. Mach. Div.**
**FMC, Outdoor Power Equip. Div.**
Ford Motor Co., Tractor Operations
Goodall
**Grasshopper Co.**
Gravely
Haban Mfg. Company
**Hahn Inc.**
**Heckendorn Mfg. Co.**
Hefty Tractor Co.
Hesston, Woods Div.
Honda Power Equip.
**Howard Price Turf Equip.**
**John Deere & Co.**
Kut-Kwick Corp.
Lawn-Boy
Massey-Ferguson
McDonough Power Equip., Snapper
Mo-Trim Inc.
**Nunces Mfg.**
OME Inc.
Pen-Gro Sales Co.
Rhino by Athens & Servis, Austin Prod.
Roof Mfg. Co.
**Ryan Turf Equipment/OMC Lincoln**
Sarlo Power Mowers
**Sensation Corp.**
Simplicity Mfg. Co.
Smithco
Terrain King Corp.
Tiger Corp.
**Toro Co.**
Wheel Horse Prod.
**Wisconsin Marine Inc.**
Yazoo Mowers

### Mowers, Sickle Bar

**Allis-Chalmers**
Didier Mfg.

### Mulchers, Hydraulic

**Bowie**
Erocon, Div. Electric Tech. Corp.
**Finn Equip. Co.**
**Reinco**
Strong Mfg. Co.

### Net Layers

Robark Inc.
Western Cascade Inc.

### Netting

**Conwed Corp.**
**Delmarva Textile Co., Inc.**

### Netting, Erosion Control

**American Enka Co.**
Gulf States Paper Corp.
Turfibre Prod., Enkamat

### Nozzles & Accessories

Broyhill Co.
Continental Belton Co.
Delavan Corp.
F. E. Myers Co.
Minnesota Wanner Co.
Nelson Irrigation Corp.
**Safe-T-Lawn**
**Spraying Systems Co.**
Tri-con, Inc.
Walsh Mfg. Co.

### Parts

Aladdin Mfg., Mower, Aerator
Dayco Corp., Belts
Omark Ind. Inc., Chain Saws
Power Lawn Mower Parts, Engines, Mowers
R & R Prod. Inc., Mower, Aerator
Sabre Saw Chain, Saw Chain

### Patio & Walkway Materials

Langco Ltd.
Old Dutch Materials Co.

### Picnic Tables

American Playground Device Co.
Belson Mfg. Co.
Chadwick Mfg. Co.
Columbia Cascade Timber Co.
Dentin Mfg. Co.
Game Time Inc.
Gerber Mfg. Inc.
Giant Mfg. Inc.
Howmet Aluminum Corp.
J. E. Burke Co.
Jamison Inc.
Kay Park-Rec Corp.
L. A. Steelcraft Prod.
Mexico Forge-Kilgore
Midwest Mfg. Co.
Milroy Mfg. Inc.
Patterson-Williams
R. J. Thomas Mfg. Co.
Recreation Equip. Corp.
Sargent-Sowell Inc.
Stadiums Unlimited
Sturdisteel
Trojan Playground Equip.
Vee Ent.

# Introducing the Front Line.™ The first mower built tough enough to be a Cushman.

There's a good reason why Cushman has been around for such a long time: We build equipment that lasts a long time.

And that's never been more obvious than with our new Front Line rotary mower.

**Built for keeps.**

The Front Line's 72" mower deck is made of 12-gauge carbon steel, reinforced and arc welded. It has a multi-disc PTO clutch, direct drive to the deck gear box with a sealed and lubricated shaft drive. The hydrostatic transmission is driven by two continuously engaged "A" section belts with self-adjusting tension.

There's no need to worry about overloading the Front Line's engine. The combination of our high torque engine and specially designed mower deck allows you to mow tall weeds and fine grass.

**Superior performance.**

The Front Line's cut in fine grass is so smooth, you won't believe it was made with three separate blades. That's because the blades overlap 1½" to reach every inch of grass in the full 72" swath. Also, the cutting height is adjustable to eight positions, from 1" to 4½" in half-inch increments.

Operating the Front Line couldn't be easier. With individual front wheel brakes, and wheel-type steering controlling a single rear wheel, you get tight maneuverability and better control on varying terrain.

The Front Line's mower deck makes your job easier, too. It extends more than a foot to one side, so you can trim right up to fences or trees. And it lifts hydraulically for transport over curbs. What's more, a large capacity fuel tank lets you work up to 6 hours between refills.

**100% Cushman.**

Most rotary mowers use engines built by outside suppliers. Not the Front Line. Its 18-hp, air-cooled engine is all-Cushman. So is the differential. And the PTO drive. Which means all parts and service are provided by your Cushman dealer.

Send us this coupon today, and we'll tell you more about the new Front Line: The only mower built Cushman-tough. 80-CUT-5

YES, I want more information on the new Front Line™ rotary mower. Prove to me that it really is tough enough to be a Cushman.

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Title _____

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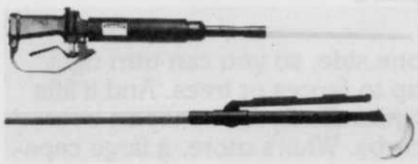
## Equipment

*continued*

**Stanley Hydraulic Tools** introduces its PR29/30 heavyduty tree pruners with a lightweight head that reduces operator fatigue. The pruners weigh



only 9 pounds; are 7 feet, 2 inches long; and have a 2¼-inch cutting capacity. The PR29/30 comes with fiberglass or aluminum handles, both thermally insulated

**The Sensation Corp.'s** latest mower is the 11L2-0 that is powered by a 2-cycle Kawasaki engine. Features of the 4.3-hp engine are a cast iron cylinder sleeve; few moving parts

for less maintenance; positive engine lubrication for mowing slopes; a 5-quart capacity fuel tank; and a case hardened steel crankshaft. A non clog suction lift blade cuts a 21-inch swath from 1 to 3 inches in height in ¼-inch increments.

**J I Case** features its DH4 hydrostatic drive trencher that permits forward/reverse and variable digg-

ing chain speeds with reduced engine problems. The DH4 trenches

### Planters

Deep Root Corp.
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Parker Greenhouses Int'l
Rosenwach Inc.

### Plants/Trees

American Garden Cole
C.M. Hobbs & Sons, Inc.

### Play Structures

Action Prod. Inc.
American Playground Device Co.
Big Toys
Blue Valley Ind.
N. American Rec. Conv.
Park Structures Int.
Patterson-Williams
Playworld Systems

### Pools, Decorative

Hermitage Gardens
Valley View Industries

### Plows, Sand Trap

Dedoes Ind., Inc., Sand Pro
Turfco Prod. Co.

### Post Hole Diggers

Allis-Chalmers
Continental Belton Co.
Dayton Electric Mfg. Co.
Erickson Corp.
Ford Motor Co., Tractor Operations
**John Deere & Co.**
Massey-Ferguson
Rhino by Athens & Servis, Austin Prod.
Don Savage Co., Inc.
Union Fork & Hoe Co.

### Pressure Washers

**Allis-Chalmers**
Broyhill Co.
Continental Belton Co.
**FMC, Agric. Mach. Div.**
Ford Motor Co., Tractor Operations
**Jacobsen Mfg. Co., Div. of Textron Inc.**
**John Deere & Co.**
Massey-Ferguson
Minnesota Wanner Co.
Northeast Industries, Inc.
E.E. Rockey and Co.
Sioux Steam Cleaner
Walsh Mfg. Co.
Warwick Pump, Inc.

### Pruners

AEG Power Tool Corp.
American Standard Co.
Ames, a McDonough Co.
Avco, E-Z Flow
Baker Equipment Eng. Co.
Bartlett Mfg.
Corona Clipper Co.
Florian Pruners
Friend Mfg. Corp.
H. K. Porter Inc.
**John Deere & Co.**
New Draulics, Inc.
Products For Energy, Inc.
**Robinson Ind., Limb Lopper**
**Safety Test Inc.**
Schwartz Mfg.
Seymour Smith & Son Inc.
**Stanley Hydraulic Tools**
Tanaka Kogyo USA
True Friends Garden Tools, Inc.
Wilson, D. J. Co.
Hermann A. Wirth

### Pumps

Ace Pump Corp.
Randolph Austin Co.
Barnant Corp.
Berkeley Pump Co.
Broyhill Co.
Camac Industries
Cat Pumps Corp.
Continental Belton Co.
Delavan Corp.
Dover Corp.
F.E. Myers Co.
Flotec Inc.
**FMC, Agric. Mach. Div.**
Gorman-Rupp Industries
Homelite Div., Textron
Honda Power Equipment
Hydroflo Corp.
**Hypro, Inc., Div. of Lear Siegler Inc.**
Jaeco Pump Co.
Kembro
Little Giant Corp.
MP Pumps, a Div. of Tecumseh Prod. Co.
Mec-O-Matic Co.
Midland Pump, LFE Fluid Controls Div.
Minnesota Wanner Co.
Peerless Pump
**Robinson, Ind., Limb Lopper**
**Solo Inc.**
**Stanley Hydraulic Tools**
Walsh Mfg. Co.
Wanner Engineering, Inc.
Warren Rupp Co.

### Rakes, Landscape

Arps, Div. Chromalloy
Dedoes Ind. Inc.
**Excel**
Glenmac, Inc.
KEM Enterprises
Kenyon Manufacturing Inc.
Rhino by Athens & Servis, Austin Prod.
Roseman Mower Co.
Rugg Mfg. Company
York Modern Corp.

### Rock Pickers

Armor Metal Prod.
Glenmac, Inc.
KEM Enterprises
N.P. Nelson
Viel Mfg. Co.

### Rollers, Lawn

**Brouwer Turf Equip. Ltd.**
Northeast Power Products Inc.

### Rope

**Safety Test Inc.**
**Samson Ocean Systems**

### Safety Wear/Equipment

Boss Mfg. Co.
Hall's Safety Equ. Co.
Ben Meadows Co.
Mine Safety Appliance Co.
Norton Company
Rainfair, Inc.
**Safety Test Inc.**

# Compact riding trenchers... PLUS!

Your Ditch Witch 2200 or 2300 machines can become much more than just riding trenchers. Add the versatility of a utility backhoe, a hydraulic breaker and/or the hydraulic boring unit package...and you have added a lot more production potential.

The A220 Backhoe was specially designed for the 2200 and 2300 models. This 5-foot-range unit can help meet those unexpected underground construction challenges. It has an 8-foot, 6-inch reach and does not interfere with backfilling.

The Roto Witch III hydraulic boring unit, a hydraulic breaker or any of several hydraulic tools can be used on the same machine as the construction needs dictate.*

Yes, if you have 2200's or 2300's in your fleet, you've got more work potential than really meets the eye. Contact your nearest Ditch Witch dealer or send for more information.

*Quick-couple hydraulic manifolds are available as an option on 2200 and 2300 models.

Write **143** on reader service card

## I could use more work potential.

Please send me more information on:
(check one or more)

☐ Model 2200 ☐ Model 2300 ☐ Hydraulic Breaker
☐ A220 Backhoe ☐ Boring Unit

☐ Arrange a contact by my nearest Ditch Witch dealer.

Name: _____

Company: _____

Address: _____ Phone: _____

City: _____ State: _____ Zip: _____

Mail to:
**Charles Machine Works, Inc.**
P.O. Box 66
Perry, Oklahoma 73077

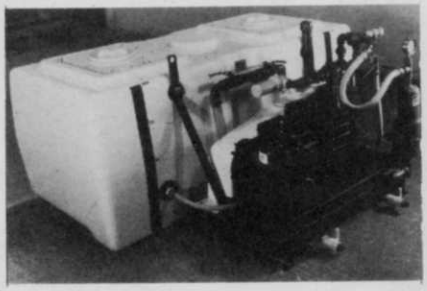
DITCH WITCH

Ditch Witch and are registered trademarks of the Charles Machine Works, Inc.

## Equipment
*continued*

up to 406 mm (16 inches) wide and 1,829 mm (72 inches) deep. Two hydrostatic systems power the ground drive and the attachments.

**Tuflex Mfg. Co.** has introduced a fiberglass spray tank. The PC 200-gallon divided tank contains two



separate 100-gallon compartments for diversified spraying. Throwing two valve switches, the suction and return line goes from one chemical spraying to the other.

**Bowie Industries** is combining its Hydro-Mulcher with Ag-Chem Equipment Co.'s Ag-gator 2004 all-terrain chassis for easy grass and

plant growth in undeveloped areas and difficult terrains. The hydro-mulcher plants, seeds, sprigs, fertilizes, waters, sprays, and mulches in a one-step application that covers 200 feet.

**Jacobsen Div. of Textron Inc.,** is offering the Turfcat, a riding rotary mower with an optional 54-inch dozer blade, front and rear traction weights, and tire chains. Besides dozing snow, debris, or materials, the machine mows with a 50- or 60-inch cutter deck.

### Saws
Bartlett Mfg. Co.
Corona Clipper Co.
**John Deere & Co.**
Energy Inc.
**Safety Test Inc.**
Seymour Smith & Son
**Stanley Hydraulic Tools**
True Friends Garden Tools

### Scrapers
Avcon Ind.
Caterpillar Tractor Co.
Eversman Mfg. Co.
Gill Mfg. Co.
International Harvester

### Screeners
Lindig Mfg. Corp.
Royer Foundry & Machine Co.

### Seeders, Hydraulic
**Bowie**
**Finn Equip. Co.**
**Reinco**
Strong Mfg. Co.

### Seeders
Avco, E-Z Flow
Brillion Iron Works
Cyclone Seeder Co.
Dobbins Inc.
Gandy Co.
**Jacobsen Mfg. Co., Div. of Textron Inc.**
**John Deere & Co.**
Lambert Corp.
Larson Machine Inc.
Lawnmaker Mfg. Co.
Lely Corp.
Meredith Seed Miser
**Princeton Mfg. Co.**
**Toro Co.**

### Sharpeners
Bernhard Export
**John Deere & Co., Chain Saw**
Foley Mfg. Co., Chain Saw, Mower, Chipper
Granberg, Chain Saw

### Shears
Bartlett Mfg. Co.
Corona Clipper Co.
**John Deere & Co.**
**Safety Test Inc.**
Seymour Smith & Son Inc.
Skil Corp.
**Stanley Hydraulic Tools**
True Friends Garden Tools, Inc.

### Shelters
Bock Industry Inc.
Cedar Forest Products Co.
Cuckler Bldg. Systems
Game Time Inc.
Koppers Co. Inc.
Kwik-Bilt Inc.
Mexico Forge-Kilgore
Milroy Mfg. Inc.
Miracle Recreation Equip.
National Steel Prod. Co.
Park Structures Int.
Poligon
R.J. Thomas Mfg. Co.
Shenango Steel Bldg.
**Standard Golf Co.**
Starrco Co. Inc.
Timberlodge Inc.
Tubular Prod. Inc.
Walker/Parkersburg, Div. of Textron
Western Wood Structures

### Snow Blowers
Atlas Tool Mfg. Co.
**Excel Industries**
**FMC, Bolens Div.**
**FMC, Outdoor Power Equip. Div.**
**Grasshopper Co.**
**Jacobsen Mfg. Co., Div. of Textron Inc.**
Lambert Corp.
McDonough Power Equipment
**Toro**

### Snow Plows
Sun Trak Industries
**Swenson Spreader Co.**
Western Products Div.

### Sod Cutters
Guest Industries Inc.
**Jacobsen Mfg. Co., Div. of Textron Inc.**
R.J. Thomas Mfg. Co.
**Ryan Turf Equipment/OMC Lincoln**
Turfco Prod. Co.

### Sod Equipment
**Brouwer Turf Equipment Ltd.**
Ferguson Welding & Spring, Inc.
Nunes Mfg.
**Princeton Mfg. Co.**
R&R Products Inc.
Raverty's Sod Blades

### Sod Harvester
**Beck's Turf-Nursery, Inc.**
**Brouwer Turf Equip. Ltd.**
Nunes
**Princeton Mfg. Co.**

### Soil Mixers
Clements Associates, Inc.
Ventura Mfg. & Implement Co.

### Soil Sampler
Turfgrass Products Corp.

### Soil Shredders
Gruendler Co.
Lindig Mfg. Corp.
Royer Foundry & Machine Co.

### Soil Test Labs
**Hach Chem. Co.**
HC Hellige Inc.
La Motte Chemical
Sudbury Laboratory Inc.

### Soil Test Meters
A & H Marketing
Advanced Marketing, Inc.
**Crane, Howard, Inc.**
**Hach Chemical Co., (pH)**
Kel Instruments Co., Inc.
Soil Moisture Equip., Corp.

### Sprayers
Ag-chem Equip. Co., Inc.

Agrotec Inc.
**Allis-Chalmers, Tractor**
**Allis-Chalmers, Trailer**
Amchem Prod. Co., Push
Beeco Products Co.
B&G Equip. Co., Compressed Air
Broyhill Co., Tractor
Broyhill Co., Trailer
Buffalo Turbine Ag. Equip., Back Pack
Carlson Co.
Century Engr., Tractor
Champion Sprayer Co., Tractor
Champion Sprayer Co., Back Pack
Chapin Mfg. Works, Compressed Air
D.B. Smith, Back Pack
Delta Foremost
Dethmers Mfg. Co., Tractor
Dethmers Mfg. Co., Trailer
E-Z Rake Inc., Tractor
F.E. Myers Co., Tractor
F.E. Myers Co., Trailer
**FMC, Agricultural Div.**
**FMC, Outdoor Power Equip. Div., Tractor**
**FMC, Outdoor Power Equip. Div., Trailer**
Ford Motor Co., Tractor Operations, Tractor
Friend Mfg. Corp., Trailer
H.D. Hudson Mfg. Co., Compressed Air
H.D. Hudson Mfg. Co., Tractor
H.D. Hudson Mfg. Co, Trailer
H.D. Hudson Mfg. Co., Trumbone
**Hahn Inc., Tractor**
**Hahn Inc., Trailer**
Hanson Equip. Co., Tractors
Hanson Equip. Co., Trailer
**HMC, Green Machine**
Hustler Corp.
Hydro-Turf Inc.
**John Deere & Co., Trailer**
**John Deere & Co., Tractor**
**John Deere & Co., Tractor Mount**
Lely, Highway
Marco Div.
Maruyama Corp. of America
Marwald Limited
Master Sprayers Inc., Trailer
Micro-Gen Equip. Corp., ULV
Micron West Inc., Herbi
Parco, Compressed Air
Root Lowell, Compressed Air
Root Lowell, Trailer
Root Lowell, Back Pack
Skibbe Mfg. Co., Tractor
Skibbe Mfg. Co., Trailer
Smithco, Trailer
**Solo Inc.**
Sorensen Sprayers Inc., Aircraft
Spray Baby Inc.
Strong Mfg. Co.
Universal Div./Leig Prod. Inc.
Universal Div./Leigh, Back Pack
**Vandermolen Corp., Back Pack**
Walsh Mfg. Co., Tractor
Walsh Mfg. Co., Trailer
Wheel Spray Co., Trailer, Push, Tractor
W-W Grinder Inc.

## Spray Guns

Century Engr.
Continental Belton Co.
**Cushman, OMC-Lincoln**
Delavan Corp.
Dountz Equip. Co.
F.E. Myers Co.
**FMC, Agric. Mach. Div.**
**Hypro, Inc., Div. of Lear Siegler Inc.**
**Master Mfg. Co.**
Minnesota Wanner Co.
**Safe-T-Lawn**
**Spraying Systems Co.**
Walsh Mfg. Co.
Westheffer Co. Inc.

## Spray Units

Broyhill Co.
Century Engr.
Continental Belton Co.
**Cushman OMC-Lincoln**
Dountz Equip. Co.
F.E. Myers Co.
**FMC, Agric. Mach. Div.**
Hill's Liqui-Systems
**John Deere & Co.**
Larson Machine Inc.
Lawn Pro
Lindig Mfg. Corp.
**Master Mfg. Co.**
Master Sprayers Inc.
Minnesota Wanner Co.
Nordick Canadian R & D Ltd., Truck Mounted
Power Spray Tech.
Professional Turf Specialties, Lawn Care
**Torco Equip. Co., Lawn Care**
Walsh Mfg. Co.
Westheffer Co. Inc., Lawn Care
Westheffer Co. Inc., Tree

## Spreaders

Ag-chem Equip. Co., Inc.
Avco, E-Z Flow
Brinly-Hardy Co.
Champion Sprayer Co.
Clampco Inc.
Cyclone Seeder Co., Hopper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**E.C. Geiger**
Harleysville, PA
(215) 256-6511

**Growers International**
Houston,TX
(713) 667-2405

**A. H. Hummert Seed Company**
St. Louis, MO
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**Moyer Chemical Company**
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Santa Ana, CA
(714) 549-2871

**Oregon Horticultural Supply Co.**
Portland, OR
(503) 232-7138

**Regal Chemical Company**
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Knoxville, TN
(615) 577-5443

**Southern Agricultural Insecticides, Inc.**
Palmetto, FL
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Hendersonville, NC
(704) 692-2233
Boone, NC
(704) 264-8843

**Target Chemical Company**
Cerritos, CA
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(714) 821-9020
Phoenix, AZ
(602) 272-6867
San Jose, CA
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**John Deere & Co.**
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Lambert Corp.
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Lawnmaker Mfg. Co.
Leisure Lawn Inc.
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O.M. Scotts & Son
Occidental Chem. Co., Manual
Seymour Mfg. Co.
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Sperry New Holland
**Swensen Spreader Co.**
Thomsen Prod.
**Trac 'N Combo**
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Vicon Farm Mach.

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Howard Rotavator Co., Inc.
**Princeton Mfg. Co.**

### Straw Blowers

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**Finn Equip. Co.**
**Reinco**

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**Big Trees Today Inc.**
**FMC, Outdoor Power Equip. Div.**
**Heckendorn Mfg. Co.**
Levco Mfgs., Inc.
Lindig Mfg. Corp.
Olathe Mfg. Co. Inc.
Promark Prod. West
Spartan Tree Equip. Co.
**Vermeer Mfg. Co.**

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American Lincoln
American Water Broom Co.
**Atwater Strong**
Brinly-Hardy Co., Turf
**Brouwer Turf Equip. Ltd.**
Erickson Corp.
**FMC, Sweeper Div.**
**Jacobsen Mfg. Co., Div. of Textron Inc.**
**John Deere & Co.**
Lambert Corp.
Little Giant Prod.
Mr. Air Sweepers, Truck Mounted
**Olathe Mfg. Co. Inc.**
Parker Sweeper Co.
Sweepster Inc., Jenkins Equip. Co.
Tennant Co.

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New and Unusual Products Co.

### Tanks, Metal

Broyhill Co.
Dountz Equip. Co.
Hydroflo Corp.
Minnesota Wanner Co.
Westheffer Co. Inc.

### Tanks, Fiberglass

Broyhill Co.
Burch Mfg. Co.
Continental Belton Co.
County Plastics Corp.
Ecor Spray Systems Div.
F.E. Myers Co.
Fiberglass Unlimited, Inc.
**FMC, Agric. Mach. Div.**
Hemco Corp.
Raven Ind.
**Tuflex Mfg. Co.**
Walsh Mfg. Co.
Westheffer Co. Inc.

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Lely
Turfco Mfg. Inc.

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**Bolens Div. FMC Corp.**
Roscoe Brown Corp.
Engineering Products Co.
Ferrari Int.
Gravely
Green Hoe Co., Inc.
Hinds Intl. Inc., Equip. Div.
International Harvester
**J I Case, Davis Div.**
**Jacobsen Mfg. Co., Div. of Textron Inc.**
**John Deere & Co.**
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McDonough Power Equip.
**Satoh Agric. Mach. Mfg. Co.**
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Life-Time Prod., Heavy Equipment
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OME Inc.
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Precision Products, Inc.
Ram Ind.
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**Snowco**
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Trooper Co.
**Vermeer Mfg. Co.**
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Big John Tree Transplanter
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Caretree Systems
Clegg, Nursery Equip. Co.
Del Zotto Mfg. Inc.
**Princeton Mfg. Co.**
**Robinson Ind.**
Rokor Inc.
Schutt's Equip. Co.
Spartan Tree Equip. Co.
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**Big Trees Today Inc.**
Caretree Systems
Clegg, Nursery Equip. Co.
Del Zotto Mfg. Inc.
Mechanical Transplanter Co.
**Princeton Mfg. Co.**
**Robinson Ind.**
Rokor Inc.
Schutt's Equip. Co.
Spartan Tree Equip. Co.
**Vermeer Mfg. Co.**

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Brown, Roscoe, Corp.
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**Ditch Witch Div.**
Erickson Corp.
International Harvester
Kraft Inc.
**Seaman Co.**
**Vermeer Mfg. Co.**

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Black & Decker Mfg. Co.
**Bunton Co.**
Dayton Electric Mfg. Co.
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**HMC, Green Machine**
**Hoffco**
Homelite Div., Textron
**Stanley Hydraulic Tools**
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Pac-Craft Prod.
Peabody Galion
Reading Body Works

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**Presto Products**
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**Allis-Chalmers**
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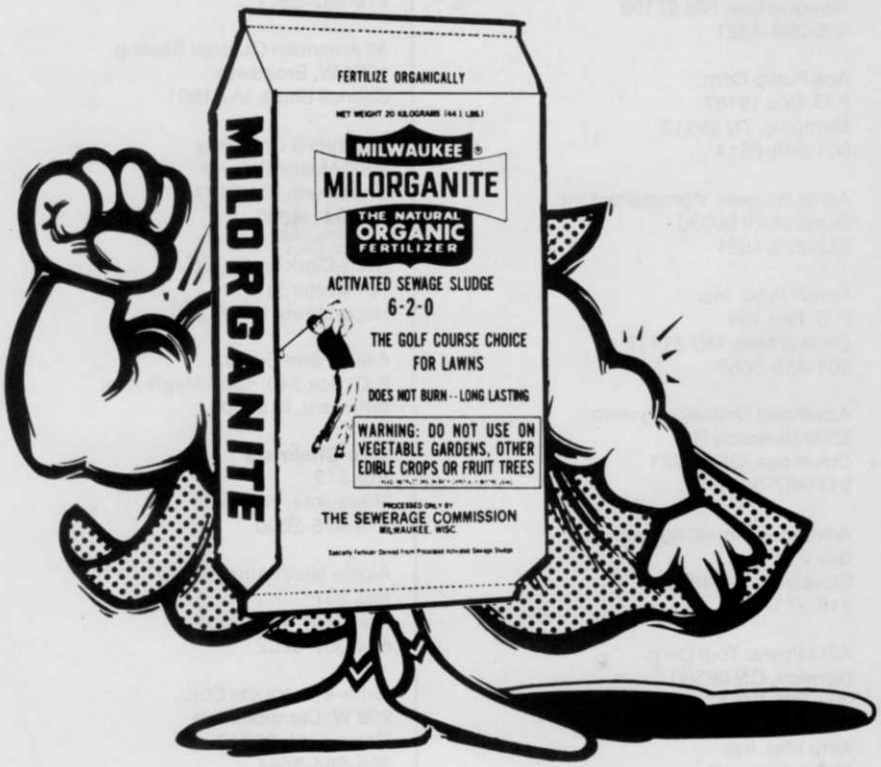


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Cleveland, OH 44121
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AEG Power Tool Corp.
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Agri-Systems Div., Min-Max Int'l. Inc.
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Ag-Rain Inc.
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Agtronics Mfg. Co.
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Allegretti & Company
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Dakota City, NE 68731
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Bay City, MI 48707
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Fargo, ND 58102
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Hopkin, MN 55343
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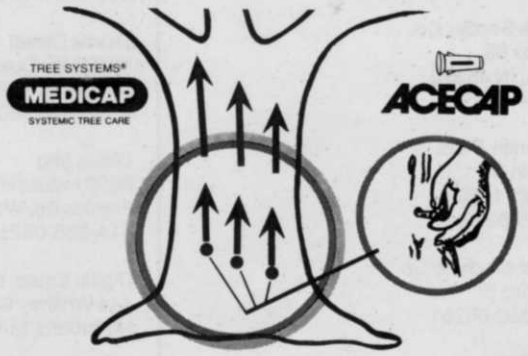


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Lincoln, NE 68501

Cyclone Seeder Co.
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219-774-3339

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315-735-5223

Danuser Machine Co.
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Dayco Corp.
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Dayni Controls Mfg. Co.
18414 Eddy St.
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213-349-8367

Dayton Electric Mfg. Co.
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251 Mason Way
City of Industry, CA 91746

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313-624-7710

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Milford, DE 19963
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901-363-4340

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914-266-3150

Detroit Diesel Allison, Div. GMC
13400 W. Outer Dr.
Detroit, MI 48228
313-424-4960

Didier Mfg.
8630 Industrial Dr.
Franksville, WI 53126
414-886-0525

Digital Equip. Corp.
444 Whitney St.
Northboro, MA 01532

**Ditch Witch Div., Charles Machine**
P.O. Box 66
Perry, OK 73077
800-654-6481

Dobbins Inc.
P.O. Box 1870 A
Garden Grove, CA 92642
714-539-2281

Dountz Equip. Co.
1437 E. 5th Ave.
Columbus, OH 43219

Dover Corp.
Blackmer Pump Div.
1809 Century Ave. S.W.
Grand Rapids, MI 49509
616-241-1611

Dredgeast, Inc.
P.O. Box 206
New Cannan, CT 06840
203-972-0701

Drip-Eze
P.O. Box X
El Cajon, CA 92022

Drip-Igation Co.
P.O. Box 400 McArthur Dr.
North Little Rock, AK 72118
501-758-3695

Durnell Engineering Inc.
Broadway (Hwy. 4) S.
Emmetsburg, IA 50536

**Dynamic Industries Inc.**
Box 466
Barnesville, MN 56514
800-346-4858

ESB Inc.
101 Gibraltra
Horsham, PA 19044
215-674-9500

**E-Z-Go, Div. of Textron**
1225 N. Cty. Rd. 18
Minneapolis, MN 55427
612-542-0516

E-Z Rake Inc.
P.O. Box 506
Lebanon, IN 46052
317-482-1662

Echo Inc.
3150 MacArthur Dr.
Northbrook, IL 60062
312-291-2800

**Ecor Spray Systems Div.**
2820 Electronic Dr.
Melbourne, FL 32935
305-254-0923

**Edmont-Wilson**
2568 Walnut St.
Coshocton, OH 43812

Edwards Equip. Co.
4312 Main St.
Yakima, WA 98903

Enclosures Inc.
80 Main St.
Moreland, GA 30259

Engineered Products Co.
2021 MacArthur Road
Waukesha, WI 53186
414-547-5558

Erickson Corp.
211 St. Anthony Pkwy. NE
Minneapolis, MN 55418
612-789-8811

Eversman Mfg. Co.
Dept. SM 12/Box 4345
Denver, CO 80204

**Excel Industries**
P.O. Box 727
Hesston, KS 67062

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400 Orange St.
Ashland, OH 44805
419-322-1544

**FD Kees Mfg. Co.**
700 Park Ave.
Beatrice, NE 68310
402-223-2391

Feldmann Engr. & Mfg. Co., Inc.
633 Monroe St.
Sheboygan Falls, WI 53085
414-467-6167

Ferguson Welding & Spring, Inc.
25170 W. Edison Rd.
South Bend, IN 46628
219-234-4303

Fert-O-Ject
4701 Old San Jose Rd.
Santa Cruz, CA 95065

Fiberglass Unlimited, Inc.
South Highway 81
Watertown, SD 57201
605-886-5137

**Finn Equip. Co.**
2525 Duck Creek Rd.
Cincinnati, OH 45208
1-800-543-7166

Firestone Tire Co.
1200 Firestone Pkwy.
Akron, OH 44317
216-379-7000

**Flexitube Int. Corp.**
Box 292
Willowgrove, PA 19090
215-674-8036

Flo Control Inc.
3212 Winona Ave.
Burbank, CA 91503

Florian Pruners
797 Mott Hill Rd.
S. Glastonburry, CT 06073

Flotec Inc.
14510 South Carmenita Rd.
Norwalk, CA 90650

The Flymo Co.
13400 Northrup Way
27, Issaquah, WA 98005
206-643-2720

**FMC, Agric. Mach. Div.**
5601 E. Highland Dr.
Jonesboro, AR 72401
501-935-1970

**FMC Corp., Bolens**
215 S. Park St.
Port Washington, WI 53074

FMC, Sweeper Div.
1201 E. Lexington St., Box 2547
Pamona, CA 91766
714-629-4071

Foley Mfg. Co.
3300 5th St. N.E.
Minneapolis, MN
800-328-7140

Ford Motor Co., Tractor Operations
2500 E. Maple Rd.
Troy, MI 48084
313-643-2000

Fox Valley Marking Systems
172 South N.W. Highway
Cary, IL 60013
312-639-5744

Francesville Drain Tile Corp.
Francesville, IN 47946
219-567-9133

Friend Mfg. Corp.
Gasport, NY 14067
716-772-2622

Fuerst Brothers Inc.
Rhinebeck, NY 12572
914-876-3575

Game Time Inc.
P.O. Box 121
Fort Payne, AL 35967
205-845-5610

Gandy Co.
528 Gandrud Rd.
Owatonna, MN 55060
507-451-5430

General Bandages Inc.
8300 LeHigh Ave.
Morton Grove, IL 60053
312-966-8383

General Electric Co.
Dept. 1180, Nela Park
Cleveland, OH 44112

General Irrigation Co.
P.O. Box 776
Carthage, MO 64836

General Tire & Rubber
1 General St.
Akron, OH 44329

Gerber Mfg. Inc.
P.O. Box 163
Middleton, WI 53562
608-271-2777

GF Plastic Systems Inc.
2882 Dow Ave.
Tustin, CA 92680
714-731-8800

Giant Mfg. Inc.
Council Bluffs, IA 51501

Giant Vac Mfg. Co.
Machine Shop Rd.
S. Windham, CT 06266
203-423-7741

Gill Mfg. Co.
Box 15214
Charlotte, NC 28210

Gilson Bros.
Box 152
Plymouth, WI 53073

**Glenmac, Inc.**
P.O. Box 1398
Jamestown, ND 58401
800-437-9779

Global Irrigation Corp.
7341 Whittier Ave.
Whittier, CA 90602
714-522-7390

Goodall
1405 Bunton Rd.
Louisville, KY 40213

Gorman-Rupp Industries
Belleville, OH
419-886-3001

Granberg Ind.
200 S. Garrand Blvd.
Richmond, CA

**Grasshopper Co.**
P.O. Box 810
Moundridge, KS 67107
316-345-6304

Grass Pavers Ltd.
3807 Crooks Rd.
Royal Oak, MI 48073

Gravely Tractor Inc.
3505 Gravely Ln.
Clemmons, NC 27012

Gray Mfg. Co.
1316 Frederick Ave.
St. Joseph, MO 64501

Greenfield Traveling Sprinklers
P.O. Box 5695
Lubbock, TX 79417
806-763-9591

Green Hoe Co., Inc.
West Main Rd.
Portland, NY 14769
716-792-9433

Green Manufacturing, Inc.
P.O. Box 408
Bowling Green, OH 43402
419-353-5231

Griswald Controls
Box 19612
Irvine, CA 92713

**Ground Hog Inc.**
P.O. Box 290
San Bernadino, CA 92402

Gruendler Co.
2915 N. Market St.
St. Louis, MO 63106
314-531-1220

GTE Sylvania
100 Endicott St.
Danvers, MA 01923
617-777-1900

Guest Industries Inc.
3601 Winsted Rd.
Torrington, CT 06790
203-482-1118

Gustafson Mfg. Co. Inc.
P.O. Box 4188

Corpus Christi, TX 78408
512-882-4025

H. D. Hudson Mfg. Co.
500 N. Michigan Ave.
Chicago, IL 60611

H.K. Porter Inc.
Somerville, MA 02143
617-776-8200

Haban Mfg. Co.
2100 Northwestern Ave.
Racine, WI 53404
414-637-8388

**Hach Chem. Co.**
P.O. Box 907
Ames, IA 50010

**Hahn Inc.**
1625 N. Garvin
Evansville, IN 47711
812-428-2024

Hall's Safety Equip. Co.
Box 230
Grove City, PA 16127

Hancor Inc.
P.O. Box 1047
Findlay, OH 45840

**Clifford B. Hannay & Son, Inc.**
704 E. Main St.
Westerlo, NY 12193
518-797-3791

Hansen Weatherport
P.O. Box 477
Gunnison, CO 81230
303-641-0480

Hanson Equip. Co.
301 Charles St.
S. Beloit, WI 61080

Harlo Products Corp.
4210 Ferry St. Sw
Grandville, MI 49418

The Delmer F. Harris Co., Inc.
Box 278
Concordia, KS 66901
913-243-3321

Hartwig-Hartoglass, Inc.
Box 282
Woodstock, IL 60098
815-338-1827

Haul-All
P.O. Box 2184
Kansas City, KS 66110

HC Hellige Inc.
877 Stewart Ave.
Garden City, NY 11530

**Heckendorn Mfg. Co.**
Box 88
Cedar Point, KS 66843
316-274-4201

Hefty Tractor Co.
Cross and Industrial St.
Juneau, WI 53039

Helix Corp.
P.O. Box 289
Crown Point, IN 46307

Hemco Corp.
Box 210
Independence, MO 64051
816-796-2900

Hendrix & Dail, Inc.
P.O. Box 631
Greenville, NC 27834
919-758-4263

**Herd Seeders Inc.**
P.O. Box 448
Logansport, IN 46947

Hermitage Gardens
Route 5
Canastota, NY 13032
315-697-9093

Hesston, Woods Div.
Oregon, IL 61061

Highway Equip. Co.
616 D Ave. NW
Cedar Rapids, IA 52405
319-363-8281

Hill's Liqui-Systems
Victoria, TX 77901

Hinde Engineering Co.
654 Deerfield Rd.
Highland Park, IL 60039
312-432-6031

Hinds International Inc. Equip. Div.
P.O. Box 4327
Portland, OR 97208
503-234-7411

**HMC, Green Machine**
22133 S. Vermont
Torrance, CA 90502
213-320-0940

C.M. Hobbs & Sons, Inc.
9300 W. Washington St.
Bridgeport, IN 46231
317-241-9253

Hockney Company
913 Cogswell Dr.
Silver Lake, WI 53170
414-889-4581

**Hoffco Inc.**
358 NW F Street
Richmond, IN 47374

Holly Filter
31820 Via Ararat
Bonsall, CA 92003
714-728-7095

Holsclaw Bros.
1325 E. Virginia St.
Evansville, IN 47711
812-423-7721

Homelite Div., Textron
P.O. Box 7047
Charlotte, NC 28217
704-588-3200

Honda Power Equip.
100 West Alondra Blvd.
Gardena, CA 90247
213-321-8680

**Howard Price Turf Equip.**
18155 Edison Ave.
Chesterfield, MO 63017
314-532-7000

Howard Rotavator Co. Inc.
343 S. Division St., P.O. Box 100
Harvard, IL 60033
815-943-6424

Husqvarna Inc.
151 New World Way
S. Plainfield, NJ 07080

Hustler Corp.
P.O. Box 1283
Jonesboro, AR 72401

Hydro Engr.
Dept WT-1, Box 98
Young American, MN 55397

Hydra-Mac, Inc.
Box N
Thief River Falls, MN 56701
218-681-7130

Hydro Terra Corp.
800 N. Park Ave.
Pomona, CA 91768
714-623-3211

Hydroflo Corp.
112 Maple Ave.
Dublin, PA 18917
215-249-9090

Hydro-Turf Inc.
P.O. Box 3
Elk Grove Village, IL 60007
312-437-6666

**Hypro, Inc., Div. of Lear Siegler Inc.**
375 Fifth Ave. NW
St. Paul, MN 55112
612-633-9300

Iberia Earthmovers
Iberia, OH 43325

Inject-O-Meter Mfg. Co., Inc.
820 Tronton
Clovis, NM 88101
505-763-4461

Insect-O-Cutor Inc.
1531 Stone Ridge Dr.
Stone Mountain, GA 30083
404-939-2835

Intermatic, Inc.
Intermatic Plaza
Spring Grove, IL 60081
815-675-2321

International Harvester Co.
Agricultural Equip. Div.
401 N. Michigan Ave.
Chicago, IL 60611
312-836-3056

International Harvester
600 Woodfield
Schaumburg, IL 60196
312-884-3000

International Reforestation Suppliers
P.O. Box 5547
Eugene, OR 97405
503-345-0597

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**International Spike**
P.O. Box 1750
Lexington, KY 40593

Irrometer Co., Inc.
P.O. Box 2424
Riverside, CA 92516
714-689-1701

Jaeco Pump Co.
539 Ford St.
West Conshochocken, PA 19428

J. A. Nearing Co.
9390 Davis Ave
Laurel, MD 20810

JCB Inc.
10939 Philadelpia Rd.
P.O.Box 209
White Marsh, MD 21162
301-335-2800

J. E. Burke Co.
Fond du Lac, WI 54935
414-921-9220

**J I Case**
700 State St.
Racine, WI 53404

**J I Case, Davis Div.**
P.O. Box 1801
Wichita, KS 67201
316-945-0111

JLG Industries, Inc.
JLG Drive
McConnellsburg, PA 17233
717-485-5161

**Jacobsen Mfg. Co., Div. of Textron Inc.**
1721 Packard Ave.
Racine, WI 53403

Jamison Inc.
8800 Mettler St.
Los Angeles, CA 90003

**John Deere & Co.**
John Deere Rd.
Moline, IL 61265

Johns Manville, Buckner
P.O. Box 232
Fresno, CA 93708
209-442-8511

Johns-Manville
Ken-Caryl Ranch
Denver, CO 80217

K-D Mfg. Co.
P.O. Box 4547
Waco, TX 76705
817-799-0232

K-Rain Mfg. Corp.
1640 Australian Ave.
Riviera Beach, FL 33404
305-844-1002

**Kawasaki Motors Corp.**
650 Valley Park Dr.
Shakopee, MN 55379

Kay Park-Rec Corp.
Janesville, IA 50647
800-553-2476

Kel Instruments Co., Inc.
P.O. Box 1869
Clifton, NJ 07015
201-471-3954

KEM Enterprises
2309-A S. Tacoma Way
Tacoma, WA 98409
206-473-3770

Kembro
Box 205
Mequon, WI 53092
414-242-2630

Kenyon Manufacturing Inc.
1145 W. Barkley Ave.
Orange, CA 92667
714-634-3422

Kershaw Mfg. Co.
Box 9328
Montgomery, AL 36108

Keystone Group
7000 South West Adams St.
Peoria, IL 61641

King Bros. Ind.
27114 Henry Mayo Dr.
Valencia, CA 91355
805-257-3262

Koehring Co.
P.O. Box 1279
Appleton, WI 54912

Kohler Co.
Kohler, WI 53044
414-457-4441

Komatsu Forklift (U.S.A.) Inc.
P.O. Box 947
La Mirada, CA 90637
414-739-3631

Koppers Co. Inc.
1900 Koppers Bldg.
Pittsburgh, PA 15219

Korex Ind.
51 El Pueblo Dr.
Scotts Valley, CA 95066

Kraft Inc.
135 N. Caseville Rd.
Pigeon, MI 48755
517-453-3641

**Kubota Tractor Corp.**
550 W. Artesia Blvd.
Compton, CA 90220
213-537-2531

Kut-Kwick Corp.
P.O. Box 984
Brunswick, GA 31520

Kwik-Bilt Inc.
3114 Benton St.
Garland, TX 75042
214-494-1164

LaFont Corp.
1319 Town St.
Prentice, WI 54556
715-428-2881

L.A. Steelcraft Prod.
1974 Lincoln Ave.
Pasadena, CA 91103

L. B. Foster
415 Holiday Dr.
Pittsburgh, PA 15220

La Motte Chemical
Box 329
Chestertown, MD 21620
301-778-3100

**Lakeshore Equip. & Supply**
300 S. Abbe Rd.
Elyria, OH 44035

Lambert Corp.
519 Hunter Ave.
Dayton, OH 45404
513-223-7295

Landscape Forms
Rt. 3
Kalamazoo, MI 49001

Landscape Structures Inc.
300 Dawn Heather Dr.
Delano, MN 55328
612-972-3391

Langco Ltd.
P.O. Box 550
Bridgeport, CT 06604
203-366-3701

Larson Machine Inc.
Princeville, IL 61559
309-385-4312

Claude Laval Corp.,
Lakos Separators
1911 N. Helm
Fresno, CA 93727
209-255-1601

Lawn-Boy
Div. of Outboard Marine Co.
Galesburg, IL 61401
309-343-0141

Lawn Pro
1111 S. Alpine
Rockford, IL 61108
815-397-9367

Lawnmaker Mfg. Co.
Box 671
Bay City, MI 48707
517-894-4578

Leisure Lawn Inc.
765 Liberty Lane
Dayton, OH 45449

Lewis Systems
22911 Montgomery St.
Watertown, WI 53094
414-261-3162

Levco Mfgs., Inc.
PO Drawer L.
Wynne, AR 72396
501-238-8126

Life-Time Prod.
Box 465
Kewanee, IL 61443
309-853-3387

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Warehouse employees like Chuck Douglas make certain the products get from the warehouse to you.

Paul Morgan knows the accurate alignment and durability of bedknives is important. He works to improve the quality of Lakeshore's bedknives and replacement parts.

Phil Gardner, a former golf course superintendent, studies his customers' needs carefully before recommending specific products. Phil is proud to be marketing LESCO Fertilizers and CBS Certified Ryegrass Blend.

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**LESCO PRODUCTS**

**Divison of Lakeshore Equipment & Supply Co.**
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Oklahoma City, OK 73112
405-947-2511

Little Giant Prod.
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Peoria, IL 61601

Locke Power Mowers
1085 Connecticut Ave.
Bridgeport, CT 06607

**Long Mfg. N.C. Inc.**
Box 1139
Tarboro, NC 27886
919-283-4151

Lord & Burnham
Irvington, NY 10533

Lumenite Electronic Co.
2331 N. 17th Ave.
Franklin Park, IL 60131
312-455-1450

LLO-MAR, Marco Div.
210 S. Main
Newkirk, OK 74647
405-362-3162

Magline Inc.
503 S. Mercer St.
Pinconning, MI 48650

**Maruyama Corp. of America**
P.O. Box 669, 2361 Vineyard
Escondido, CA 92025
714-745-0669

Marwald Limited
2300 Industrial St.
Burlington, Ont. Canada L7P 1A1
416-335-5817

Massey-Ferguson
1901 Bell Ave.
Des Moines, IA 50315

Master Craft Ind. Equip. Corp.
P.O. Box 106
Tifton, GA 31794
912-386-0610

Master Craft Trailers
204 Middlefield St.
Middletown, CT 06457

**Master Mfg. Co.**
119 Main, P.O. Box 694
Sioux City, IA 51102
712-258-0108

Master Sprayers Inc.
10756 Vernon Ave.
Ontario, CA 91761
714-627-7466

**Mathews Co.**
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Cliff Belden
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**LESCO OF UPPER NEW YORK**
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Galen Decker
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Earl Griffith
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McGregor Greenhouses
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Box 1008B
Holland MI 49423
616-396-8738

Mec-O-Matic Co.
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Medalist Standard Steel
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Three Rivers, MI 49093
616-279-5211

Melnor Ind. Inc.
1 Carol Place
Moonachie, NJ 07074

Menardi Southern Corp.
P.O. Box 240
Augusta, GA 30903
404-724-8241

Meredith Seed Miser
Box 21
Howe, ID 83244
208-767-3411

Mexico Forge-Kilgore
P.O. Box 565
Reedsville, PA 17084

Micro-Gen. Equip. Corp.
10700 Sentinel Dr.
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512-654-8570

Microdot Prod.
2530 Crescent Dr.
Broadview, IL 60153
312-343-9820

Micron West Inc.
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Houston, TX 77024

Midland Pump,
LFE Fluid Controls Div.
100 Skiff St.
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203-281-8000

Midwest Mfg. Co.
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Millerbernd Mfg. Co.
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612-485-2111

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201 N. Braddock Ave.
Pittsburgh, PA 15208

Minnesota Wanner Co.
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**Mitts & Merrill Inc.**
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Shaumburg, IL 60196

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312-354-7220

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313-822-0240

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National Car Rental System
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612-830-2475

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2107 Stewart Rd.
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201-652-6202

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Par Aide Prod.
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St. Paul, MN 55104

Parco Products
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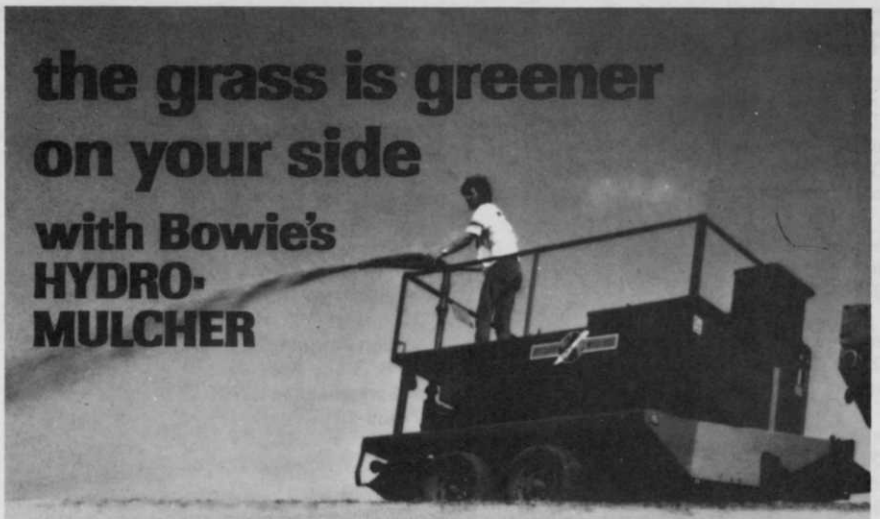


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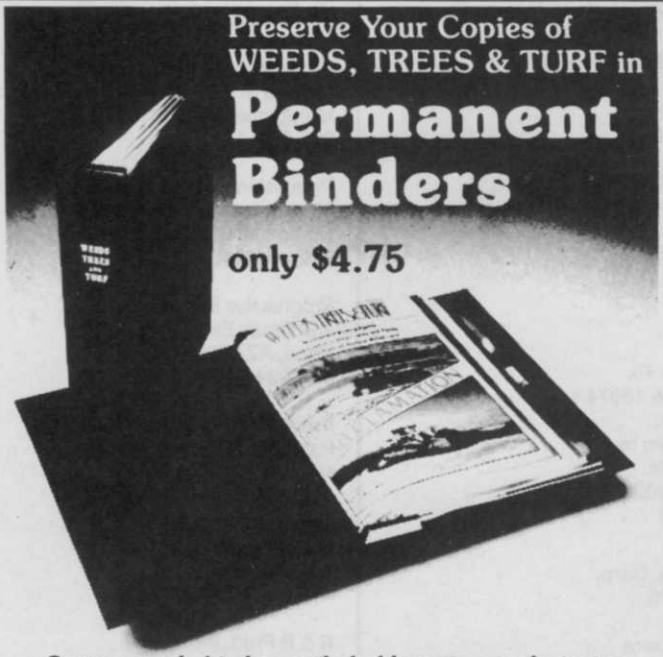


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Canton, MA 02021
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Holland, MI 49423
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217-528-1311

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802-885-5576

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Safway Steel Prod.
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Sturdisteel
P.O. Drawer 949
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817-756-2121

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15921 S. San Pedro St.
Gardena, CA 90247

Union Chain
P.O. Box 651
Sandusky, OH 44870

Union Fork & Hoe Co.
500 Dublin Ave.
Columbus, OH 43216

United Metal Rec. Corp.
14th & Laurel Sts.
Pottsville, PA 17901
717-622-7715

Univ. Tractor Equip. Corp.
Box 5489-928 N. Meadow St.
Richmond, VA 23220

Universal Div./Leigh
460 Main St.
Saranac, MI 48881
616-642-9413

USA Lift Inc.
636 Fifth Ave.
New York, NY 10020
212-247-7100

Valcon Auto Irr. Equip.
1726 S. Del Mar Ave.
San Gabriel, CA 91776
213-280-5350

**Vandermolen Corp.**
119 Dorsa Ave.
Livingston, NJ 07039
201-992-8506

Van Pines Inc.
Box 768
West Olive, MI 49460
616-399-1620

Vee Ent.
Box 1047
Des Moines, IA 50311
515-276-5377

Vegetable Factory
Box 2235, Grand Central Station
New York, NY 10017

**Vemco Corp.**
1331 23rd St.
Racine, WI 53403
414-634-6050

Ventura Mfg. & Implement Co.
1265 Commercial Ave.
P.O. Box 1069
Oxnard, CA 93030
805-486-8444

Verandel Co.
Box 1568
Worchester, MA 01601

**Vermeer Mfg. Co.**
Box 200
Pella, IA 50219
515-628-3141

Viel Mfg. Co.
Box 632
Billings, MT 59103
406-252-6808

Vicon Farm Mach.
3741 Cook Blvd.
Chesapeake, VA 23323
804-485-1600

Victor Stanley Inc.
P.O. Box 93
Dunkirk, MD 20754

W-W Grinder Inc.
Box 4029
Wichita, KS 67204
316-838-4229

Walbro Corp.
Cass City, MI 48726
517-872-2131

Walker/Parkersburg, Div. of Textron
P.O. Box 1828
Parkersburg, WV 26101

Jim Walls Company
Commerce Plaza, Suite 126
12820 Hillcrest Rd.
Dallas, TX 75230

Walsh Mfg. Co.
1200 Fisher St.
Charles City, IA 50616
515-228-3414

Wanner Engineering, Inc.
1204 Chestnut Ave.
Minneapolis, MN
612-336-5681

The Warren Rupp Co.
P.O. Box 1568-E
Mansfield, OH 44901
419-524-8388

Warwick Pump, Inc.
P.O. 18286
5408 E. Drive
Baltimore MD 21227

Washington Industrial Resources
12514 Pacific Highway S.
Seattle, WA 98168
206-244-9510

Water Works Garden Houses
Box 905
El Cerrito, CA 94530

Weather-Tech. Corp.
5645 E. Clinton Ave.
Fresno, CA 93727
209-291-5555

**Weathermatic, Div. of Telsco Ind.**
P.O. Box 18205
Dallas, TX 75218
214-278-6131

Weber Systems Inc.
P.O. Drawer L
New Hope, AL 35760

Weed Eater Inc., Div. Emerson Electric
5146 Richmond Ave.
Houston, TX 77036

Wells Cargo
1532 McNaughton St.
Elkhart, IN 46515

Welsbach Lighting Inc.
240 Sargent Dr.
New Haven, CT 06511
203-789-1710

Western Cascade Inc.
1150 N. Red Gum St.
Anaheim, CA 92803
714-630-4640

Western Products Div.
7777 N. 73rd St.
Milwaukee, WI 53223
414-354-2310

Western Wood Structures
8333 S.W. Cirrus Dr.
Beaverton, OR 97005
503-644-1721

Westheffer Co. Inc.
Box 363
Lawrence, KS 66044
913-843-1633

Westinghouse Electric Corp.
Lamp Div.
Bloomfield, NJ 07003

Wheel Horse Prod.
515 W. Ireland Rd.
South Bend, IN 46614
219-291-3112

Wheel Spray Co.
P.O. Box 97
Delafield, WI 53018
414-646-8640

White Farm Equip.
2625 Butterfield Rd.
Oak Brook, IL 60521
312-887-0110

Wide Lite
P.O. Box 606
San Marcos, TX 78666
512-392-5821

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One of the most dependable vehicles for moving your crew around is the 3- or 4-wheel Cushman® Turf-Truckster. But it was also designed for more than just transportation.

Equipped with an optional PTO and hydraulic system, both models accept a wide range of special, add-on turf maintenance equipment. So with just one Turf-Truckster you can haul, dump, grade, seed, spray, spread, top dress, aerate and more.

But there's more to a Turf-Truckster than versatility. There's a rugged 18-hp engine that's built to take on your turf. It comes with a standard 2 to 1 auxiliary transmission. A transmission built to allow a gear driven PTO to be attached directly to it. And common sense engineering makes the Turf-Truckster steer clear of the repair shop, too.

The 3-wheel model gives you the maneuverability of a tight 17′ turning circle, while the 4-wheeler has seating room for two. And it just takes minutes to

add any of the Turf-Truckster's accessory pieces, thanks to Cushman's pin-disconnect system. No bolting, no hitching. Just snap two or three pull pins in place and you're ready to hit the turf.

If a good transportation/hauling vehicle is all you need, though, look at the Cushman Runabouts. There's an 18-hp two-seater, and a fuel-stingy 12-hp one-seater model. Both Runabouts are economical to own. And like any Cushman vehicle, they're built tough.

There's nothing like a Turf-Truckster or Runabout to get more work done, in less time and with less manpower. For a closer look at what goes into, or behind, a Cushman vehicle, return this coupon today. 80-CUT-2

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**Show me what you put into a vehicle, Cushman.**

☐ I'd like a demonstration of the Turf-Truckster (3-wheel or 4-wheel). (Circle One)

☐ I'd like a demonstration of the Runabout (12-hp or 18-hp). (Circle One)

I'm interested in seeing these Turf-Truckster attachments: ☐ Aerator; ☐ Sprayer; ☐ Top Dresser; ☐ Grader/Scarifier; ☐ Flatbed/Dump Box; ☐ Cyclone Seeder/Spreader.

☐ Send me your new 1980 catalog.

Name

Title

Address

City State Zip

# And a lot behind it.

**The Turf-Truckster CUSHMAN**

**The Labor-Saving Turf System.**

2029 Cushman, P.O. Box 82409
Lincoln, NE 68501, 402-435-7208

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## Equipment Companies
*continued*

Wilcox Tools
Montezuma, IA 50171

Wilson, D. J. Co.
2707 Churchill Dr.
Huntsville, AL 35801
205-881-2762

Hermann A. Wirth
P.O. Box 4305
Princeton, FL 33032

**Wisconsin Marine Inc., Bob Cat**
Dept. 52A, 1 Bob-Cat Lane
Johnson Creek, WI 53038
414-699-2177

Woodchuck Chippers
P.O. Box 400
Shelby, NC 28150
704-482-4356

Yamaha Motor Corp.
6555 Katella Ave.
Cypress, CA 90630
714-522-9141

**Yanmar Diesel Engine Co.**
476 Country Club Dr.
Bensenville, IL 60106

Yard Vac
5567 Airways Ave.
Fresno, CA 93727
209-291-6691

Yazoo Mowers
3607 Livingston Rd.
Jackson, MS 39216
601-366-6421

York Modern Corp.
Box 488
Unadilla, NY 13849

Young Ind.
1033 Wright Ave.
Mt. View, CA 94043

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**Boots Hercules Agrochemicals Co.** is marketing Nitroform, a high-analysis, organic, ureaform nitrogen (38-0-0) that soil microorganisms utilize. Field tests have shown that

when Nitroform is used as the source of nitrogen in a seed bed or fertilization program, a residual is established in the soil for sustained nourishment.

# 3. Chemicals

### Adjuvant/Carrier

| | |
|---|---|
| Cleary Chemical Corp. | All-Wet |
| | Clear Spray |
| | Defoamer |
| Drexel Chem. Co. | Peptoil |
| | Surf AC 820 |
| Kalo Labs Inc. | Hydro-Wet |
| Leffingwell Chemical Co. | |
| **Nalco Chemical Co.** | **Nalquatic** |
| | **Nalco Trol** |
| **PBI Gordon Corp.** | |
| **Rhone-Poulenc** | **Visko-Rhap** |
| Rohm & Hass | Triton |
| Thompson-Hayward Chem. | Activate |
| | Savol |

### Algaecide

| | |
|---|---|
| **Applied Biochemists Inc.** | **Cutrine-Plus** |
| **Ciba Geigy Corp.** | **Algaecide** |
| Cloro-Spray Corp. | Brilliant |
| Great Lakes Biochemical | Algimycin |
| Thompson-Hayward Chem. | Algaetrol-76 |
| Woodbury Chemical Co. | Liqua-wer |

### Antitranspirant

| | |
|---|---|
| C.B. Dolge | Antidessicant Spray |
| Cloro-Spray Corp. | |
| Miller Chemical & Fertilizer | Vapor Gard |
| **Wilt Pruf Products Inc.** | **Wilt Pruf** |
| **PBI Gordon Corp.** | **Exhalt 4-10** |

### Aquatic Herbicides

| | |
|---|---|
| Amchem Products Inc. | Fenac |
| **Applied Biochemists Inc.** | **Weedtrine** |
| **Chevron Chemical Co.** | **Diquat** |
| **Ciba Geigy** | **Aquazine** |
| **Dow Chemical Corp.** | **Dalapon** |
| Great Lakes Biochemical Co. Inc. | Chelated Copper |
| **Pennwalt** | **Aquathol K** |
| Thompson-Hayward Chem. | Casoron |
| 3M Co. | Systems E & L |

### Colorant

| | |
|---|---|
| Cleary Chemical Corp. | Grass Greenzit |
| International Research Union | Perma Green |
| **Mallinckrodt Inc.** | **Auragreen** |
| | Vitalon |

### Compatibility Agent

| | |
|---|---|
| Amoco Oil Co. | Spray Mate |
| Arjay, Inc. | Armix |
| Hopkins Agric. Chemical | Unite |
| Kalo Labs Inc. | Compex |
| Loveland Ind. Inc. | E-Z Mix |
| Miller Chemical & Fertilizer | Spray-Aide |
| Occidental Chem. Co. | Comp-Ad |
| Organic Labs Inc. | Com(ph)trol |
| Rigo Co. | |
| Sandoz Inc. | |
| Stull Chemical Co. | Bivert-S |
| Thompson-Hayward Chem. | Uni-Mix |

### Defoamer

| | |
|---|---|
| Loveland Ind. Inc. | Fighter F |
| Miller Chemical & Fertilizer | Foam Fighter |
| **Nalco Chemical Co.** | **Nalco 2151** |

### Dethatcher

| | |
|---|---|
| **Agro-Chem** | **Micro-Munch** |
| Bio Dethatch | |

### Drift Retardant

| | |
|---|---|
| Loveland Ind. Inc. | Target |
| **Nalco Chemical Co.** | **Nalco-Trol** |

### Fertilizer, Tree

| | |
|---|---|
| **Creative Sales, Inc.** | **Medicap Fe** |
| | Medicap Mn |
| | Medicap Zn |
| | Medicap MD |
| Davey Tree Expert Inc. | Arbor Green |
| Ferti-Feed Inc. | Tree Food |
| **International Spike, Inc.** | **Jobe's Tree & Shrub Spikes** |
| J.J. Mauget Co. | |
| **Lakeshore Equip. & Supply Co.** | **Sulfur Coated Urea** |
| O.M. Scott & Sons | |
| **Plant Marvel Dist. Co.** | **Evergreen Food** |
| Rohm & Haas | Silviplex |
| **Ross Daniels Inc.** | **Tree Stakes** |
| Sierra Chem. Co. | Agriform Planting Tablets |
| Sierra Chem. Co. | Osmocote |

### Fertilizer, Turf

| | |
|---|---|
| **Agro-Chem. Inc.** | **Soil Rebuilder** |
| | Vita Feed |
| Agway | |
| **Allied Chemical** | **Folian** |
| Ashland Chemical Co. | Formalene |
| **Best Products** | **Turf Supreme** |
| | Turf Supreme + Best Cote |
| | Turf Gold |
| | Sulphur Coated Urea |
| | Turf Food+ Weed Control |
| | Turf Supreme + Balan |
| | Turf Surpeme + Insecticide |
| | Greens King Ultra |
| Canadian Ind. Ltd. | **Sulfur-Coated Urea** |
| **Creative Sales, Inc.** | **ACECAP** |
| **Estech Gen. Chem.** | **IBDU** |
| Ferti-Feed Inc. | Lawn Food |
| Hampshire Chelates | Chelated Iron |
| | Chelated Zinc |
| | Chelated Manganese |
| | Chelated Copper |
| Cloro-Spray Corp. | Cloro-Spray Iron |
| **Boots Hercules Inc.** | **Nitroforam** |
| Heritage House | Gro-Care |
| **Lakeshore Equip. & Supply Co.** | **Sulfur Coated Urea** |
| Lebanon Chemical Corp. | Country Club Fertilizer |

| | |
|---|---|
| Leffingwell Chemical Co. | Vita-Tone |
| **Mallinckrodt Inc.** | **Esmigram** |
| Miller Chemical & Fertilizer | Sol-U-Gro |
| | Nutri-Leaf 60 |
| **Milw. Metro. Sew. District** | Milorganite |
| Olin Chem Corp. | Ammo-Phos |
| | Urea |
| **PBI Gordon Corp.** | **Dymec 50** |
| **Plant Marvel Dist. Co.** | **Bent Special** |
| | **Bermuda Special** |
| | **Potash Special** |
| | **HiAcid** |
| | **Triple Twenty** |
| | **Plant Marvel** |
| | **Lawn Marvel** |
| | **Cal-Mag Special** |
| Rohm & Haas | Multiplex Turf |
| Sesco Ent. Inc. | Fertil-Ade |
| | Chemec |
| | Mor-Green Iron Chelate |
| Sierra Chem. Co. | Osmocote |
| Sta-Green Plant Food Co. | Sta-Green Lawn Fertilizer |
| | Centipede & St. Augustine Food |
| | Lawn + Garden |
| | Tree & Turf |
| | Seed & Sod |
| USS Agri-Chemicals | Vertagreen Tournament Plus |
| USS Agri-Chemicals | Tee Green |
| | For professional use |
| | Tournament Fertilizer w/Balan |
| W.R Grace & Co. | Mag Amp |
| Westheffer Co. Inc. | |

## Fungicide, Tree

| | |
|---|---|
| Hopkins Agric. Chemical | Arbotect |
| J.J. Mauget Co. | |
| **Merck & Co., Inc.** | **Arbotect** |
| **PBI Gordon Corp.** | **Dymec 50** |

## Fungicides, Turf

| | |
|---|---|
| Agway, Inc. | Glyodin |
| **Best Products** | **Turf Disease Control** |
| Bonide Chemical Co., Inc. | Benomyl |
| | Captan |
| | Copper |
| | Folpet |
| | Sulphur |
| C.B. Dolge | Daconil 2787 |
| | Fungo 50 |
| | Kroban 30 |
| | Kromad |
| | Tersan |
| **Chevron Chem. Co.** | **Captan** |
| Cleary Chemical Corp. | Bromosau |
| | Caddy |
| | Cad-Trete |
| | Cadmium |
| | Cadmium Chloride |
| | Cadmium + Thiram |
| | PMAS |
| | Spotrete |
| | Thiram |
| **Diamond Shamrock Corp.** | **Daconil 2787** |
| E.I. Du Pont de Nemours | Benomyl |
| | Chloroneb |
| | Tersan |
| **Elanco Co., Div of Eli Lilly** | **Parinol** |
| | **Parnon** |
| | **Peperalin** |
| | **Pipron** |
| Gustafson Inc. | Captan 30-DD |
| Hopkins Agric. Chemical | Thiabendazole |
| | Correx |
| Lebanon Chemical Corp. | Benomyl |
| | Cadmium + Thiram |
| | Dacthal |
| **Mallinckrodt Inc.** | **Banrot** |
| | **Duosan** |
| | Cadmium Sebacate + Thiram |
| | **Cadmium Succinate** |
| | Cadminate |
| | Calo-Clor |
| | Calo-Gran |
| | Ethazole |
| | Ethazole + Thiaphanate Methyl |
| | Fungo 50 |
| | Kroban 30 |
| | Kromad |
| | Mercuric + Mercurous Chloride |
| | Thiophanate |
| | Thiram |
| | Thiramad |
| | Truban |
| Mobay Chemical Corp. | Baygon |
| | Dyrene |
| | Fenaminosulf |
| | Lesan |


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**WILT-PRUF**

*...the proven anti-transpirant for over thirty years,* keeps trees, shrubs, sod and indoor plants healthy. Protects against plant damage due to winter kill, transplant shock, wind burn, drought and air pollution. Concentrate is available in Pints, Quarts, Gallons, 5-Gallon, 30-Gallon and 55-Gallon sizes. Also available in 16 Oz. Redi-Spray.

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*...sticker-extender – the perfect marriage between your spray and ours!* Sticks sprays to trees, plants, crops and turf protecting against costly run-off due to rain or irrigation; prolongs adhesion and effectiveness of fungicides, herbicides, insecticides and pesticides. Comes in Pint, Gallon and 5-Gallon containers.

***for thousands of consumers and indoor plant lovers...***

**WILT-PRUF I**

*...for Christmas trees, wreaths and greens, to retard needle drop and reduce fire hazard;* keeps them fresh for the entire holiday season! WILT-PRUF I produces a thin, transparent film substantially reducing excessive evaporation when evergreens are brought indoors. Comes in 10 oz. Redi-Spray.

**WILT-PRUF II**

*...for indoor plant protection, helps plants from drying out and wilting.* When sprayed on plant foliage, WILT-PRUF II provides a thin, transparent film which acts as a protective coating substantially reducing water loss during periods when excessive evaporation occurs. WILT-PRUF II helps the appearance of foliage by providing a slight gloss to the surface of the leaves. (Avoid using on plants with hairy leaves such as African Violets.) Comes in 10 oz. Redi-Spray.

Note: SPRAY STAY and all WILT-PRUF products meet specifications of the Food and Drug Administration for use on edible crops; is 100% organic and bio-degradable; does not require registration with the EPA; is non-toxic to eyes and skin; and is not damaged by freezing.

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| O.M. Scott & Sons | Pro Turf |
| Olin Chem. Corp. | Terraclor |
| | Terrazole |
| **Ortho Div., Chevron Chemical Co.** | **Captan** |
| **PBI Gordon Corp.** | **Formec 80** |
| | **Mancozeb** |
| | **Thiophante** |
| | **Topmec 70** |
| **Pennwalt Corp.** | **Topsin E,M** |
| **Rhone-Poulenc** | **Thiram** |
| | **Chipco 26019** |
| | Chipco Spot Clean |
| Rohm & Haas | Dithane 2-78 |
| | Fore |
| | Karathane |
| | Dithane M-45 |
| | Zineb |
| **Stauffer Chemical Co.** | **Folpet** |
| | Vapam |
| | Peperalin |
| The Andersons | |
| TUCO, Div. of Upjohn Co. | Actidione, Thiram |
| TUCO, Div. of Upjohn Co. | Acti-Dione TGF |
| TUCO, Div. of Upjohn Co. | Acti-Dione RZ |
| | Cyloheximide |
| | Cyloheximide PCNB |
| | Cyloheximide Thiram |
| Vineland Chemical Co. | Cadmium Chloride |

## Growth Regulator

| | |
|---|---|
| Amchem Products Inc. | Ethrel |
| | Florel |
| Drexel Chem. Co. | Maleic Hydrazide |
| | Retard |
| **Elanco Prod. Co., Eli Lilly** | **Arest** |
| **Maag Agrochemicals** | **Atrinal** |
| **Mallinckrodt Inc.** | **Maleic Hydrazide** + Chlorflurenol |
| | PoSan |
| **Union Carbide Agri. Prod.** | **Ethephon** |
| Uniroyal Chem. Div. | Slo-Gro |
| US Borax | Maintain CF 125 |
| 3M Co. Agrichemical | Embark |

## Herbicides

| | |
|---|---|
| Amchem Products Inc. | Weedone |
| American Cyanamid | Cytrole Amitrole-T |
| Aquashade Inc. | |
| **BASF Wyandotte Corp.** | **Basagran** |
| **Best Products** | **Banvel 2,4-D** |
| | DCPA |
| | **Snail & Slug Bait** |
| Bonide Chemical Co., Inc. | Ammate |
| | 2,4-D |
| C.B. Dolge | EWT + Ethofumesate |
| | Tote |
| **Ciba Geigy Corp.** | **AAtrex** |
| | Atratol |
| | Conquer |
| | Pramitol |
| | **Princep** |
| | Promotone |
| | Simazine |
| | Supracide |
| | Trimec |
| Cleary Chemical Corp. | AMA |
| | AMAM + 2,4-D |
| | MCPP |
| | MCPP + 2,4-D |
| | Methar 30 |
| Crystal Chem. Co. | Broadside |
| | Phytar |
| Delta Foremost | Weed Zapper |
| **Diamond Shamrock Corp.** | **Dacthal** |
| | Dacamine |
| | Daconate |
| **Dow Chemical U.S.A.** | **Dinitro Amine** |
| | **Dalapon** |
| | Dowpon |
| | Esteron 99 |
| | Formula 40 |
| | Kuron |
| | Premerge 3 |
| | 2,4-D |
| Drexel Chem. Co. | Ansar 529 |
| | MMA + Surfactant |
| E.I. Du Pont de Nemours | Ammate |
| | Bromacil |
| | Hyvar X-L |
| | Krenite |
| | Krovar |
| | Lexone DF |
| | Siduron |
| | Velpar |
| **Elanco Prod. Co., Eli Lilly** | **Balan** |
| | Benefin |
| | Oryzalin |
| | Spike |
| | Surflan |


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| 1-5 cases: _____ @ $139.50/case | $ _____ |
| 6-25 cases: _____ @ $127.25/case | $ _____ |
| 26 plus: _____ @ $114.50/case | $ _____ |
| Total: | $ _____ |

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COMPANY _____

ADDRESS _____

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# Lawn Smooth, Rock Tough VEMCO Flail Mowers

**Talk about versatile! The Vemco Flail Mower keeps parks, and other large lawn areas smooth and streak-free. It also cuts rocky, trashy areas where ordinary mowers cannot go.**

**Standard Series mowers, with 42", 48" and 60" widths, have many construction features usually found only on heavy-duty models. Heavy Duty Series, with 60", 72" and 84" widths are tougher yet. Rock Dodger blades swing free in all directions, are practically immune to breakage.**

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**VEMCO**

**VEMCO CORPORATION OF AMERICA**

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## Chemicals

**Estech General Chemicals Corp.** has developed a new concept in slow-released turf fertilizers called IB-DU/SCU. The mix blends a three

nitrogen formula with sulfur-coated urea and water soluble urea to provide a three-stage release that lasts up to 90 days.

**Creative Sales, Inc.** has produced an in-store display that tells the story of the MEDICAP systemic implant. The

display contains the convenient "Ten-Paks" that are adequate to treat an average tree, plus ACECAP, a systemic insecticide implant.

**Monsanto Agricultural Products Co.** has developed Roundup, an herbicide for controlling a wide range of perennial and annual weeds and

grasses in one application. It can be mixed with water and applied with boom equipment, hand-held and high volume equipment (including knapsack sprayers), and shielded sprayers.

| | |
|---|---|
| | Tebuthiuron |
| | Treflan |
| | Trifluralin |
| Fisons Corp. | Ethofumesate |
| | Nortron |
| Heritage House | Gro-Care |
| Hopkins Agric. Chemical | Bromacil |
| | Monuron Trichloroacetate |
| | Urox |
| **Lakeshore Equip. & Supply Co.** | |
| Lebanon Chemical Corp. | Balan |
| | Dacthal |
| | Siduron |
| | Tupersan |
| | 2,4-D |
| **Mallinckrodt Inc.** | **Bensulide** |
| | **Pre-San** |
| | Trexsan |
| | TrexSan-Bent |
| Miller Chemical & Fertilizer | |
| **Monsanto Agric. Products** | **Roundup** |
| **Nalco Chemical Co.** | **Nalkil BC-4** |
| | Nalkil 2413 |
| O.M. Scott & Sons | Pro Turf |
| Occidental Chem. Co. | Monobor Chlorate |
| | Ureabor |
| **PBI Gordon Corp.** | **Betamec-4** |
| | Bensulide |
| | Mecoprop |
| | Mecomec |
| | **Trimec** |
| | 2,4-D Amine |
| | Vegemec |
| | Carbamec |
| | Trimec 352 Brush Killer |
| | Trimec Bentgrass Formula |
| **Pennwalt Corp.** | **Endothall** |
| | Hydrothol 191 |
| | Hydout |
| **Rhone-Poulenc** | **Asulox** |
| | Asulam |
| | Buctril |
| | **Chiptox** |
| | Crab Kleen |
| | DSMA |
| | MCPA |
| | MCPP |
| | Octcanoic Acid |
| | Chipco Ronstar G |
| | Rhonox |
| | Romene |
| | Ronstar G |
| | 2,4-D |
| | 2,4-DP |
| | 2,4-D + MCPP |
| | Visko-Rhap |
| Rohm & Haas | Blazer |
| | Kerb |
| | Nitrofen |
| | Pronamide |
| | Tok |
| **Stauffer Chemical Co.** | **Betasan** |
| | Eptam |
| | Vapam |
| | Vapam |
| Thompson-Hayward Chem. | Casoron |
| TUCO, Div. of Upjohn Co. | Enide 50 W |
| Velsicol | Banvel |
| | Banvel + 2,4-D |
| | Dicamba |
| | Dicamba + 2,4-D |
| | 2,4-D |

### Insecticides

| | |
|---|---|
| American Cyanamid | Cythion |
| | Dimethoate |
| | Malathion |
| | Thuricide HP |
| | Whitmire |
| **Best Products** | **Pentac** |
| | Dursban 2.5 G |
| Bonide Chemical Co. | Zectran |
| | Aspon |
| | Dursban |
| | Imidan |
| | Kelthane |
| | Lindane |
| | Malathion |
| | Sevin |
| | Vapam |
| | Diazinon |
| C.B. Dolge | Diazinon |
| | Dalcomist XC |
| | Dursban |
| | Malathion |
| **Chevron Chem. Co.** | **Orthene** |
| | Dibrom |
| **Ciba Geigy Corp.** | **Diazinon** |
| **Creative Sales, Inc.** | **ACECAP** |
| **Dow Chemical U.S.A.** | **Chlorpyrifos** |
| | **Dursban** |
| E.I. Du Pont de Nemours | Methoxychlor |
| | Oxamyl |
| Fisons Corp. | Bendiocarb |
| | Ficam W |
| Gustafson Inc. | Methoxychlor |
| Heritage House | Gro-Care |
| Hooker Chem. | Pentac WP |
| Hopkins Agric. Chemical | Malathion |
| | Abate |
| | Bacillus Thuringiensis |
| | Carbaryl |
| | Diazinon |
| | Dimethoate |
| | Dursban |
| | Methoxychlor |
| | Sevin |
| | Snail & Slug Pellets (mesuarol) |
| ICI Americas Inc. | Primicid 4E |
| J.J. Mauget Co. | Inject-a-cide |
| Lebanon Chemical Corp. | Chlorpyrifos |
| | Dursban |
| Loveland Ind. Inc. | Sevin 5 Bait |
| **Merck & Co. Inc.** | **Bacillus Thuringiensis** |
| | Agritol |
| Miller Chemical & Fertilizer | Methoxychlor |
| | Sevin |
| | Nu-Oil |
| | Diazinon |
| | Lime Sulfur |
| Mobay Chemical Corp. | Desanit |
| | Dylox |
| | Fenamiphos |
| | Fensulfothion |
| | Metasystox-R |
| | Morestan |
| | Nemacur |
| | Oxydemeton-Methyl |
| | Propoxur |
| | Trichlorfon |
| O.M. Scott & Sons | Pro Turf |
| **Ortho Div. Chevron Chem.** | **Orthene** |
| | **Dibrom** |
| **Rhone-Poulenc** | **Phosalone** |
| | Zolone |
| **Stauffer Chemical Co.** | **Aspon** |
| | **Imidan** |
| | Sevin |

| | |
|---|---|
| The Andersons | |
| Thompson-Hayward Chem. | Bacillus Thuringiesis |
| | Bactur |
| | De-Fend |
| | Dimilin |
| TUCO, Div. of Upjohn Co. | Baam |
| | Proxol |
| | Trichlorfon |
| **Union Carbide** | **Carbaryl** |
| **Union Carbide Agr. Prod.** | **Sevin** |
| **Velsicol** | **Chlordane** |
| **Wyco International** | **Mosquito** |

### Mulches, Erosion Control

American Excelsior Co.
Cal Fiber Co.
**Cellin Mfg. Inc.**
**Conwed Corp.**
Fibramulch
Fibre Therm
Fibrex Corp.
Grass Fiber Inc.
Grass Growers
Gulf States Paper Corp.
IMC Chemical Group, Inc.
International United Chem.
National Bark Sales
Owens Corning
Spartan Tree Equip. Co.
Strong Mfg. Co.
Superior Fiber Prod. Co.
Weyerhaeuser — Silvafiber

### Rodenticides

**Bell Laboratories**
Chempar Chemical Co.

### Root Killer

| | |
|---|---|
| **Applied Biochemists** | **Root Kine** |

### Soil Conditioner

| | |
|---|---|
| Agro-Chem Inc. | Soil Aid |
| | Soil Rebuilder |
| American Pelletizing Corp. | Pelletized Dolomitic Limestone |
| | Pelletized Gypsum |
| | Pelletized High Calcium Limestone |
| C.B. Dolge | Penetrate |
| Enviromental Stabliziers Int. | |
| Hyper-Humus Co. | Hyper-Humus |
| ICI | Activated Charcoal |
| IMC Chemical Group, Inc. | |
| Michigan Peat Co. | |
| **Nalco Chemical Co.** | **Naltex Soil** |
| Oil Dri Corp of America | Calcined Clay |
| | Terra-Green |
| **PBI Gordon Corp.** | **Aqua-Zorb** |
| Petrochemicals Co. | Petros |
| Soil Prods. Development | Sulfur & Iron |
| **U.S. Gypsum Co.** | **Sof'n-Soil** |
| W.R. Grace & Co. | Terra-Lite |
| | Vermiculite |
| | Perlite |
| | Redi-Earth |
| | Metro-Mix |

### Soil Fumigants

| | |
|---|---|
| Great Lakes Chemicals | Brom-O-Gas |
| | Meth-O-Gas |
| | Terr-O-Gas |
| **Hendrix & Dail** | **Methyl Bromide** |
| Miller Chemical & Fertilizer | Micro-Fume |

### Sticker/Extender

| | |
|---|---|
| Hopkins Agric. Chemicals | Plyac |
| Loveland Ind. Inc. | Bond |
| Miller Chemical & Fertilizer | Nu-Film-17 |
| **Wilt Pruf Prod. Inc.** | **Spray Stay** |
| **PBI Gordon Corp.** | **Exhalt 800** |

### Tree Dressings

Coopers Creek Chem. Corp.
Clarion Development
**Ortho Div., Chevron Chemical**
**Samuel Cabot Inc.**

### Wetting Agents

| | |
|---|---|
| **Aquatrols Corp.** | **Aqua-Gro** |
| Cloro-Spray Corp. | Dew Down X-tra |
| Hopkins Agric. Chemicals | Neptune |
| Kalo Laboratories Inc. | Hydro-Wet |
| Loveland Ind. Inc. | Activator W |
| Montco Prod. Corp. | Surfside |
| **PBI Gordon Corp.** | **Aqua-Zorb** |


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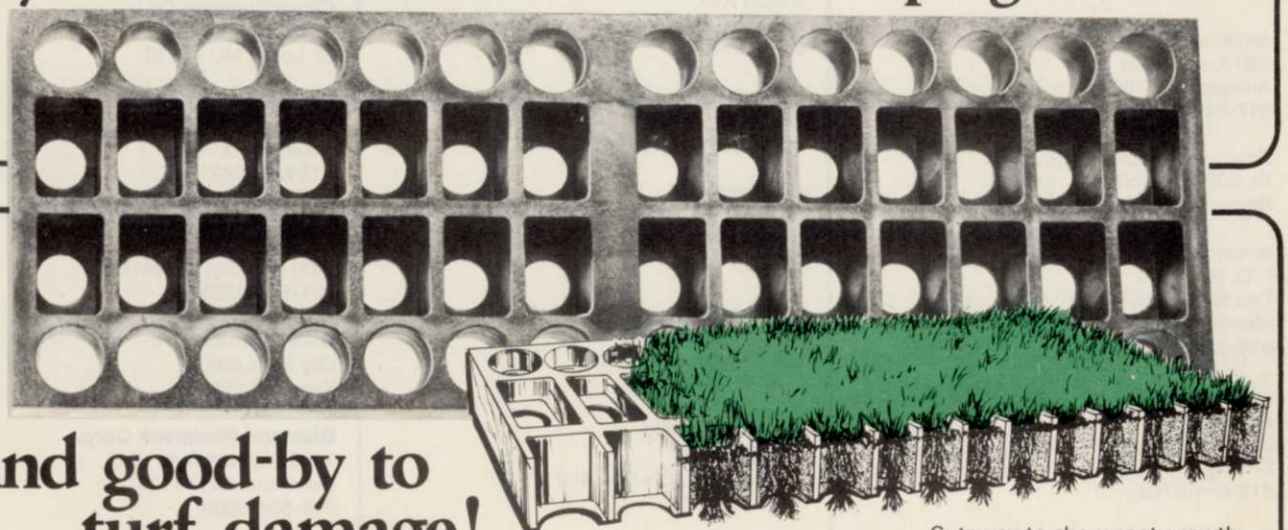

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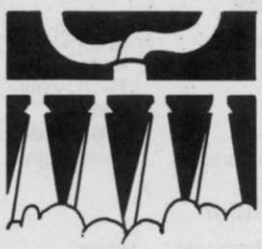

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Dept. 95M
North Chicago, IL 60064

**Agro-Chem**
11150 W. Addison
Franklin Park, IL 60131
312-455-6900

Agway Inc.
Box 1333
Syracuse, NY 13201

**Allied Chemical**
Box 2120
Houston, TX 77001
713-960-7924

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Ambler, PA 19002
Jack Breen
215-628-1374

American Cyanamid
P.O Box 400
Princeton, NJ 08540
609-799-0400

American Excelsior Co.
850 Ave. H-East
Arlington, TX 76011
817-640-1555

American Hoechst Corp.
Rt. 202-206 North
Somerville, NJ 08876

American Pelletizing Corp.
P.O. Box 3628
Des Moines, IA 50322
Marvin Zelibor
515-278-5900

Amoco Oil Co.
200 E. Randolph Dr.
Chicago, IL 60601
312-856-5760

The Andersons
P.O. Box 119
Maumee, OH 43537
419-893-5050

The Ansul Co.
One Stanton St.
Marinette, WI 54143

**Applied Biochemists Inc.**
5300 W. County Line Rd.
Mequon, WI 53092
800-558-5106

Aquashade Inc.
Box 198
Eldred, NY 12732
914-557-8077

**Aquatrols Corp.**
1432 Union Ave.
Pennsauken, NJ 08110
609-665-1130

Arjay, Inc.
13,318 Almeda Rd.
Houston, TX 77045
713-433-5651

Ashland Chemical Co.
P.O. Box 2219
Columbus, OH 43216

**BASF Wyandotte Corp.**
100 Cherry Hill Rd.
Parsippany, NJ 07054

**Bell Laboratories, Inc.**
3699 Kinsman Blvd.
Madison, WI 53704
608-241-0202

**Best Products**
P.O. Box 267
Lathrop, CA 95330
209-858-2541

Bio Dethatch Inc.
845 River Crest Ct.
Louisville, KY 40206

Bonide Chemical Co., Inc.
2 Wurz Ave.
Yorkville, NY 13495
315-736-8261

**Boots Hercules, Inc.**
910 North Market Street
Wilmington DE 19899

C.B. Dolge
11 Ferry Ln.
Westport, CT 06880
203-227-9591

Cal Fiber Co.
611 S. Anderson St.
Los Angeles, CA 90023
213-268-0191

Canadian Ind. Ltd.
P.O. Box 5201
London, Ont., CN N6A 4L6
519-672-9220

**Cellin Mfg. Inc.**
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Springfield, VA 22150

Chempar Chemical Co., Inc.
60 East 42nd St.
New York, NY 10017
212-687-3990

**Chevron Chem Co.**
575 Market St.
San Francisco, CA 94105
R. G. Gras

**Ciba Geigy Corp.**
P.O. Box 11422
Greensboro, NC 27409
919-292-7100

Cities Service Co.
P.O. Box 50360
Atlanta, GA 30302

Clarion Development Co.
126 Arla Dr.
Pittsburgh, PA 15220

Cleary Chemical Corp.
P.O. Box 10
Somerset, NJ 08873
201-247-8000

Cloro-Spray Corp.
475 Beaver St.
Bristol, PA 19007
David J. Passalaqua
215-785-5201

Conrel
110 A Street
Needham Heights, MA 02194
617-449-3970

Coopers Creek Chemical Corp.
River Rd. West
West Conshohocken, PA 19428
William A. Connelly
215-828-0375

**Creative Sales, Inc.**
222 N. Park Ave.
Fremont, NE 68025
402-727-4800

Crown Chemical Co.
4325 Duncan Ave.
St. Louis, MO 63110

Crystal Chem. Co.
1525 N. Post Oak Rd.
Houston, TX
713-682-1221

Cytozyme Laboratories Inc.
134 S. 700 W.
Salt Lake City, UT 84104
801-533-9208

Davey Tree Exp. Inc.
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Kent, OH 44240

**Diamond Shamrock Corp.**
1100 Superior Ave.
Cleveland, OH 44114
216-694-5000

**Dow Chemical U.S.A.**
P.O. Box 1706
Midland, MI 48640
517-636-0968

Drexel Chem. Co.
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2487 Pennsylvania Ave.
Memphis, TN 38109
901-774-4370

E.I. Du Pont de Nemours
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Wilmington, DE 19898
302-774-2132

**Elanco Prod. Co., Div of Eli Lilly**
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317-261-3638

Environmental Stabilizers Int.
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Tacoma, WA 98402
206-383-4971

**Estech Gen. Chem. Corp.**
P.O. Box 1996
Winter Haven, FL 33880
813-294-7793

Faesy & Besthoff, Inc.
143 River Rd.
Edgewater, NJ 07020
201-945-6200

Ferti-Feed Inc.
2419 Easton Blvd.
Des Moines, IA 50317
515-265-4485

Fibramulch
169 Centre St. E.
Richmond Hill, Ont., CN L4C 1A5

Fibre Therm
169 Centre St. E
Richmond, Ont., CN L4C 1A5

Fibrex Corp.
P.O. Box 258
Grain Valley, MO 64029
816-229-2000

Fisons Corp.
2 Preston Court
Bedford, MA 01730
617-275-1000

**FMC Corp-Ag. Chem.**
100 Niagara St.
Middleport, NY 14105

Grass Fiber Inc.
520 E. 2nd St.
Junction City, OR 97448
503-998-6812

Grass Growers
424 Cottage Place
Plainfield, NJ 07060
Norm Krisburg
201-755-0923

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Milwaukee, WI 53218
414-464-1200

Gulf States Paper Corp.
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Tuscaloosa, AL 35404
205-553-6200

Gustafson Inc.
6350 LBJ Freeway
Dallas, TX 75240
214-661-1334

Hampshire Chelates
Nashua, NH 03061
603-888-2320

Heritage House Products Corp.
4548 Emery Ind'l. Pkwy.
Warrensville Hgts., OH 44128
Dan Gavin
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Hooker Chem.
P.O. Box 344
Niagara Falls, NY 14302

Hopkins Agric. Chemical Co.
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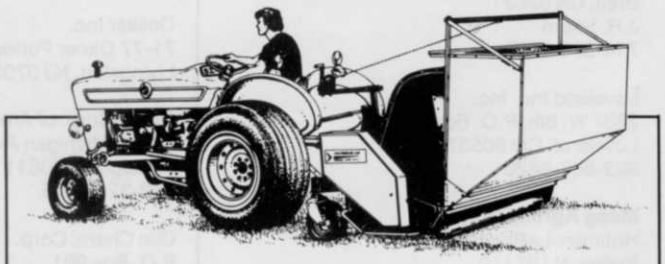

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**International Spike, Inc.**
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Lexington, KY 40593
800-354-9360

International United Chem. Co.
645 E. 60th St.
Los Angeles, CA 90001
800-421-5904

J.J. Mauget Co.
P.O. Box 3422
Burbank, CA 91504
800-423-2699

Kaiser Ag. Chem.
P.O. Box 46
Savannah, GA 31402

Kalo Labs Inc.
9233 Ward Pkwy.
Kansas City, MO 64110
816-363-1800

**Lakeshore**
300 S. Abbe Rd.
Elyria, OH 44035
216-323-7544

Lebanon Chemical Corp.
West Ross Lane, P.O. Box 647
Danville, IL 61382
217-446-8983

Leffingwell Chemical Co.
Box 1880, 111 So. Berry St.
Brea, CA 92621
J.R. Strom
714-529-3973

Loveland Ind. Inc.
2307 W. 8th, P.O. Box 906
Loveland, CO 80537
303-667-6620

**Maag Agrochemicals**
Hoffman-LaRoche Inc.
Nutley, NJ 07110
201-235-3633

**Mallinckrodt Inc.**
P.O. Box 5439
St. Louis, MO 63147
314-895-5043

Menardi Southern Corp.
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Augusta, GA 30903
Skip Peterson
404-724-8241

**Merck & Co., Inc.**
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Rahway, NJ 07065

Michigan Peat Co.
Box 66388
Houston, TX 77006
Tom Brandon
713-522-0711

Miller Chemical & Fertilizer Corp.
P.O. Box 333
Hanover, PA 17331

**Milw. Metro. Sew. District**
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Milwaukee, WI 53202

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P.O. Box 4913
Kansas City, MO 64120
816-242-2000

**Monsanto Agric. Products Co.**
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St. Louis, MO 63166

Montco Prod. Corp.
P.O. Box 404
Ambler, PA 19002
Robert Oehsle
215-628-3144

**Nalco Chemical Co.**
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Oak Brook, IL 60521
312-887-7500

National Barks Sales
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Boise, ID 83707
George R. White
208-375-0656

Nutrilite Prod., Inc.
5600 Beach Blvd.
Buena Park, CA 90620

Occidental Chem. Co.
P.O. Box 5337
Houston, TX 77012

Oetiker Inc.
71-77 Okner Parkway
Livingston, NJ 07039

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Chicago, IL 60611
312-321-1515

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Little Rock, AR 72203

Organic Labs Inc.
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Houston, TX 77043

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San Francisco, CA 94105
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913-342-8780

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209-226-8400

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Ft. Worth, TX 76101
817-625-2111

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Special Products Div.
Bartlesville, OK 74004

**Plant Marvel Dist. Co.**
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Chicago, IL 60628
312-264-0450

PPG Ind. Inc., Chem. Div.
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Seattle, WA 98148
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515-225-6471

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Sandoz Inc.
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San Diego, CA 92108

O. M. Scott & Sons
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513-644-0011

Sea Ranch, Inc.
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Sheridan, AR 72150
501-942-2515

Sesco Ent. Inc.
12100 S. Peoria
Chicago, IL 60643
312-264-0456

Sewerage Commission
of Milwaukee
8502 S. 5th Ave.
Oak Creek, WI 53154

Shell Chemical Co.
P.O. Box 3871
Houston, TX 77001
713-241-6161

Sierra Chem. Co.
1001 Yosemite Dr.
Milpitas, CA 95035
408-263-8080

Soil Prods. Development Co.
2664 N. Mountain Ave.
Upland, CA 91768
Eric Chamberlain

Sta-Green Plant Food Co.
321 N Anniston Dr.
Sylacauga, AL 35150
205-245-5282

**Stauffer Chemical Co.**
Westport, CN 06880

Stephenson Chemicals Co.
2444 West Point Rd.
College Park, GA 30337
800-241-3343

Stull Chemical Co.
1006 Paulson
San Antonio, TX 78219
512-227-5255

Superior Fiber Prod. Co.
1201 65th St.
Baltimore, MD 21237
301-866-4450

Tenneco Chem. Inc.
P.O. Box 365
Piscataway, NJ 08854

Thompson-Hayward Chemical Co.
5200 Speaker Rd.
Kansas City, KS 66110

TUCO, Div. of Upjohn Co.
7171 Portage Rd.
Kalamazoo, MI 49001
Owen Lewis
616-385-6613

**U.S. Gypsum Co.**
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Chicago, IL 60606

**Union Carbide Agri. Prod. Co. Inc.**
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**Union Carbide, Agri. Prod. Div.**
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Houston, TX 77045
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3M Center, Bldg. 223-65
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# 5. Seed Companies

**J & L Adikes, Inc,** Jamaica NY 11423

**Agricultural Service Corp.**
P.O. Box 101
Harrisburg, OR 97446
503-955-6124

**E J Burlingham & Sons,** P.O. Box 217, Forest Grove OR 97116 503-357-2141

Ernst Crownvetch Farms, RD 5, Meadville PA 16335

Grasslyn, Inc., Box AA, College Pk., MD 20740 301-864-0094

Jonathan Green & Sons, Farmingdale, NJ 07727

Great Western Seed Co., Albany OR 97321 503-926-2636

Herbst Bros. Seedsmen
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Brewster, NY 10509

Highland Bentgrass Assn., 2111 Front St., NE, Salem OR 97303

George Hill & Co.
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Florence, KY 41042
606-371-8423

**International Seeds Inc.,** P.O. Box 168, Halsey OR 97348 503-369-2251

**Jacklin Seed Co.,** Rt 2, Box 402, Post Falls ID 83854

**Lofts Pedigreed Seed Co.,** P.O. Box 146, Bound Brook NJ 08805 201-356-8700

Loft Kellogg Seed Co., Milwaukee WI 53201 414-276-0370

Lofts/New England, Arlington MA 02174 617-648-7550

Lofts/New York, Albany NY 12205 518-456-0042

Lynnville Seed Co., Lynnville, IA 50153

Mangelsdorf Seed Co.
Box 327
St. Louis, MO 63166
314-535-6700

**Manhattan Ryegrass Growers,** 1349 Capitol St. NE, Salem OR 97303

Midwestern States Fescue Assn., 149 Park Central, Springfield, MO 65806

National-NK Seeds Ltd., Box 485, Kitchener, Ontario

**North American Plant Breeders,** P.O. Box 2955, Mission KS 66205

**Northrup King Co.,** P.O. Box 959, Minneapolis, MN 55440

**Oregon Fine Fescue Comm.,** 1349 Capitol St NE, Salem OR 97303

Oseco Ltd., Box 219, Brampton, Ontario, Canada 416-457-5080

Otto Pick & Sons Seeds Ltd., Box 126, Richmond Hill, Ontario L4C 4X9 416-884-1147
Box 4, R.R.2, Winnipeg, Manitoba R3C 2E6 204-633-0088
Box 151, St. Hyacinthe, Quebec J25 5J9 514-799-4586

Penncross Bentgrass Assn., 1349 Capitol St. NE, Salem OR 97303

Pennfine Perennial Ryegrass, P.O. Box 923, Minneapolis MN 55440

**Pickseed West Inc.,** P.O. Box 888, Tangent OR 07389 503-8886

# 6. Equipment Dealers

### Alabama

Alabama Air Cooled Motor, Inc. (Howard Price) Birmingham 205-251-8321
Altec Industires Inc. (Stanely) Birmingham 205-323-8751
Arrow Rents Inc. (Clark) Montgomery 205-277-0460
Auto Electric & Carburetor Co., Inc. (Kohler Engine) Birmingham 323-7113
Cassco (Royer) Montgomery 205-277-0460
Darrell Hard Enterprises, Inc. (Satoh) Red Bay 205-356-4462
Fuller Supply Co., Inc. (Broyhill) Birmingham
J & L Equipment Sales (Clark) Birmingham 205-251-2098
Lursen Boblat (Clark) Mobile 205-457-4516
Tieco, Inc. (Richway Products) Birmingham 205-328-6464. (Cushman/OMC-Lincoln, Royer, Heckendorn, Olathe, Broyhill)
Tieco, Inc. (Heckendorn) Montgomery 205-834-3705 (Cushman/OMC-Lincoln, Olathe, Broyhill)
Tree Harvesting Equipment Co. (Clark) Saraland 205-675-6683
Vermeer Sales & Service (Vermeer) Birmingham 205-322-4536
West Alabama Equipment Co. (Clark) Pine Hill 205-963-4336
West Florida Equipment (Clark) Dothan 205-792-5121
Wislar & Co., Inc. (F. E. Myers Equipment) Birmingham 205-942-7888
Wislar & Co. (Lindig) Homewood 205-942-7888

### Alaska

Alaska Generator & Engine Sales (Kohler Engine) Anchorage 907-272-3451 (Cushman/OMC-Lincoln)
Alaska Greenhouses, Inc. (Royer) Anchorage 907-333-6970
B & F Moto 's, Inc. (Clark) Fairbanks 907-452-2050
Equipment Services Ltd. (Clark) Anchorage 907-272-3528
Jolly Electric Inc. (Clark) Kodiak 907-486-4241
Jolly Electric Inc. (Clark) Wasilla 907-376-2181
Totem Equipment & Supply (Lindig, Olathe, Cushman/OMC-Linconl) Anchorage 907-272-9573
Vermeer Sales & Service (Vermeer) Fairbanks 907-456-5184

### Arizona

Allstate Irrigation (Thompson Mfg. Co.) Mesa 602-839-8597
Charlie C. Jones, Inc. (Kohler Engine) Phoenix 602-272-5621
Energy People Inc. (Stanley) Tucson 602-327-6700
Equipment Sales Co. (Clark) Tucson 602-884-9413
Huber Sales, Inc. (Cushman/OMC-Lincoln) Phoenix 602-955-1731
J. Pickrell Co. (Broyhill) Phoenix
Larson Equipment Co. (Clark) Lake Havasu City 602-855-3577
Lawn & Garden Supply Co. (Broyhill) Phoenix 602-278-8585 (Olathe)
Lawn & Garden Supply Co. (Broyhill, Olathe, Royer) Tucson 602-294-3177
The Norton Corporation (Toro, Lindig, F. E. Myers Equipment, Cushman/OMC-Lincoln) Phoenix 602-997-2661
The O S Stapley Co. (Clark) Chandler 602-892-0475
The O S Stapley Co. (Clark) Phoenix 602-272-1311
Tucson Fertilizer Co. (Hahn) Tucson 602-294-3401
United Paper & Supply (Clark) Yuma 602-726-7330
Vermeer Sales & Service (Vermeer) Phoenix 602-267-0197

### Arkansas

Capital Equipment Co. (Cushman/OMC-Lincoln, F. E. Myers Equipment, Olathe) Alexander 501-847-3057
Clarklift of Arkansas, Inc. (Clark) Dierks 501-286-2273
Clarklift of Arkansas,Inc. (Clark) Fordyce 501-352-3800
Clarklift of Arkansas, Inc. (Clark) Fort Smith 501-785-2632
Clarklift of Arkansas, Inc. (Clark) Little Rock 501-562-1262
Dealers Truck Equipment (Stanley) No. Little Rock 501-945-7117
Dunivans Inc. (Clark) Springdale 501-756-6193
Falls Equipment Co. Inc. (Clark) Wynne 501-238-3232
Industrial Equipment Service Co. (Howard Price) No. Little Rock 501-374-9852
Ponder-Staggs Poultry Supplies (Broyhill) Nashville
Russell Tractor Co. (Rhino) West Memphis 501-735-2524
Town & Country International (Clark) Jonesboro 501-932-8383
Vermeer of Arkansas, Inc. (Vermeer) Alexander 501-847-3003

### California

A-I Turf (Thompson Mfg. Co.) Orange 714-633-3214
A-I Turf (Thompson Mfg. Co.) Canoga 213-884-1180
A-I Turf (Thompson Mfg. Co.) Gardena 213-538-4270
A-I Turf (Thompson Mfg. Co.) Loma Linda 714-824-7000
Bay Irrigation (Thompson Mfg. Co.) Concord 415-825-9411
Bishop Company (Thompson Mfg. Co.) Whittier 213-723-1522
Al Asher & Sons, Inc. (Olathe) Los Angeles 213-225-2295
Auston Products, Inc. (Rhino) Turlock 209-632-6397
Bay Bobcat (Clark) San Jose 408-998-2717
Berchtold Equipment Co. (Clark) Bakersfield 805-323-7818
Bobcat Central (Clark) Stockton 209-237-1153
Butlers Mill Incorp. L & G (Broyhill) Fresno San Diego
Carson Supply (Thompson Mfg. Co.) San Diego 714-582-4422
H. V. Carter Co., Inc. (Heckendorn, F. E. Myers Equip., Olathe) Fresno 209-224-7626
H. V. Carter Co. (Lindig, Heckendorn, F. E. Myers Equip., Howard Price, Oakland) Oakland 415-536-9300
H. V. Carter Co., Inc. (Heckendorn, F. E. Myers Equip., Olathe) Sacramento 916-927-3824
Causco West (Stanley) Signal Hill 213-595-6671
Central Valley Golf & Indus. (Cushman/OMC-Lincoln) Fowler 209-834-2588
P.V. Cloud (Thompson Mfg. Co.) Campbell 408-378-7943
Coastal Pipco (Thompson Mfg. Co.) Oxnard 805-485-0455
Coastal Pipco (Thompson Mfg. Co.) Santa Maria
Contractors Equip. & Supply Co. (Clark) Fresno 209-237-1153
Cook Tractors Inc. (Clark) Cerritos 213-926-2342
C R Cook Ford Tractor Inc. (Clark) Baldwin Park 213-962-2486
Cushmann Motors Sales, Inc. (Cushman/OMC-Lincoln) Sante Fe Springs 213-698-2561
Duke Equip. & Irrigation, Inc. (Cushman/OMC-Lincoln, Howard Rotavator) Sacramento 916-483-8448
Electric Car Distributors, Inc. (Cushman/OMC-Lincoln) Rancho Mirage 714-346-5661
J. S. Equip. Co. (Clark) Sacramento 916-922-5407
Farmers Buying Serv., Inc. (Broyhill) Fresno
Farmtec (Broyhill) Oakland
Freeman Equip., Inc. (F. E. Myers Equip.) Santa Fe Springs 213-921-0641
Generator Equip. Co. (Kohler Engine) Los Angeles 213-731-2401
George's Equip. Co. (Clark) Eureka 707-443-8403
Goodwin Equip. Co. (Royer) Mantela 209-823-2178
Guy Rent's Equip. Sales (Clark) Chico 916-343-0219
B. Hayman Co., Inc. (Howard Price, Royer) Sante Fe Springs 213-698-6761
Hydraulic Energy (Stanley) San Refael 415-472-0300
Indio Pipe & Supply (Thompson Mfg. Co.) Indio 714-347-0968
Inland Empire Tractor Inc. (Clark) Riverside 714-787-9440
J. W. Jewett Co. (Master) San Francisco
Kern Turf Supply (Thompson Mfg. Co.) Bakersfield 805-327-4048
Knights Tractor Co. (F. E. Myers Equip.) Indio 714-347-3682
H. G. Makelim Co. (Kohler Engine) San Francisco 415-873-4753
McCoy Ford Tractor (Kubota) Garden Grove 714-971-2511
Melroe Equip. Co. (Clark) Chatsworth 213-998-1011
Miramar Bobcat Inc. (Clark) San Diego 714-566-8222
Nasco West (Master) Modesto
Randell Mfg. (Broyhill) Wood Lake
The Bob Randick Co. Inc. (Mott Corp.) San Mateo 415-345-0326
San Diego Toro (Cushman/OMC-Lincoln, F. E. Myers Equip., Lindig, Toro) San Diego 714-292-9591
Dolex Corp. (Century Farm) Dixon 916-678-5533
Smith Bennett (Thompson Mfg. Co.) Ontario 714-984-3337
Smith Bennett (Thompson Mfg. Co.) Santa Monica 213-870-8128
Smith Bennett (Thompson Mfg. Co.) Van Nuys 213-988-3222
Smith Bennett (Thompson Mfg. Co.) Santa Ana 714-957-1708
Target Chemical Co. (F. E. Myers Equip.) Crerritos 213-865-9541
Top Line Equip. Co. (Clark) Redding 916-241-7031
Toro Pacific Distributing S.F. (Cushman/OMC-Lincoln, Toro) Burlingame 415-697-0794
Toro Pacific Distributing (Cushman/OMC-Lincoln, Toro) Gardena 213-327-8500
Vermeer-California Worth (Vermeer) Fremont 415-656-0585
Vermeer-California (Vermeer) Ontario 714-986-1191
Warsco Equip. Co. (Mott Corp.) Rosemead 213-283-3544
Western Lawn Equipment Co. (Hahn) San Mateo 415-341-8221
West Point Ind. (Broyhill, Hahn, Lindig) Long Beach 213-432-6954
Zorniger Equip. Co. (Broyhill) Stockton

### Colorado

Acme Precision Ind. (Stanley) Denver 303-623-7406
Banderet Equipment (Foxcroft) Commerce City 303-289-5793
Bickeley-Wellgro, Inc. (Broyhill) Wellington
Boyd Distributing Co. Inc. (F. E. Myers Equip., Olathe, Royer) Denver 303-629-7701
Central Colorado Equipment Co. (Clark) Colorado Springs 303-475-1100
CPS Distributors, Inc. (Century Farm) Denver 303-744-6371 (Satoh)
Empire Bobcat Inc. (Clark) Wheat Ridge 303-475-1100
Farm Equipment Distributors (Rhino) Denver 303-756-2043
Gas Equipment Co. of Colorado (Broyhill) Wheat Ridge
Golf Carts Inc. (Cushman/OMC-Lincoln) Denver 303-399-8455
Larimer Co. Equipment Co. (Clark) Fort Collins 303-482-7154
L. L. Johnson Distributing (Lindig, Cushman/OMC-Lincoln, Toro) Denver 303-892-6498
Pasco, Inc. (Thompson Mfg. Co.) Loveland 303-667-7038
Port Equipment Co. (Howard Rotavator) Denver 303-573-1616
Ranchers Supply Co. (Broyhill) LaJunta
Southern Colorado Equipment Co. (Clark) Pueblo 303-543-5445
South Denver Lawn Equipment (Hahn, Broyhill) Denver 303-733-4651
Spitzer Industrial Products Co. (Kohler Engine) Thornton 303-287-3414
Teague Equipment Co. (Stanley) Denver 303-534-1194
Vermeer Sales & Service (Vermeer) Arvada 303-421-8581

### Connecticut

Bacher Corp. (Heckendorn) E. Windsor 203-623-9295
Brookside Nurseries (Royer) Darien 203-655-3978
Chuck Farum, Turf Specialist (Richway Products) Stamford 203-327-2637

## Seed Companies

*continued*

Rothwell Seeds Ltd., Box 511, Lindsay Ontario

O. M. Scotts & Sons, Marysville OH 43040
800 543-0006

Seaboard Seed Co.
P.O. Box 117
Bristol, IL 60512
312-553-5801

**Seed Production Introduction Corp. (SPIC)**
1500 Jackson St. NE
Minneapolis, MN 55413

Stanford Seed Co.
809 North Bethlehem Pike
Spring House, PA 19477

Stanford Seed Co., P.O. Box 230, Plymouth Meeting PA 19462
P.O. Box 366, Buffalo NY 14240 716-825-3300

Sunbelt Seeds, Inc.
2055 Tucker Industrial Rd.
Tucker, GA 30084
404-491-1311

**Tee-2 Green,** 1212 W. Eighth St., Kansas City MO 64101 816-842-7825

**Turf Seed,** Box 250, Hubbard OR 97032

**Vaughn-Jacklin Corp.,** Bound Brook NJ 08805
Downers Grove, IL 60515
Spokane, WA 99213
Landover, MD 20785

**Whitney Dickinson Seeds Inc.,** Leslie St., Buffalo NY 14240

Deephouse Equipment Co. (Stanley) Berlin 203-655-3978
Podunk Inc. (Clark) South Windsor 203-289-8091
Powerhouse (Howard Price) Colonial Twine Co., East, Inc. New Milford 203-623-9295
The Magovern Co., Inc. (Cushman/OMC-Lincoln) Fairfield 203-255-2817 (Royer, Cushman/OMC-Lincoln, Olathe)
The Magovern Co., Inc. Windsor Locks 203-623-2508 (Royer, Cushman/OMC-Lincoln, Olathe)
Turf Products Corp. (Lindig, F. E. Myers Equip., Toro) South Windsor 203-289-3471

## Delaware

Carey Equipment Inc. (Clark) Seaford 302-629-5595
Lift Truck Inc. (Clark) Wilmington 302-575-0700
McIntyre Equipment (Clark) Laurel 302-875-7565

## Florida

American Power Products (Kawasaki), Pompano Beach 305-946-3620
Amico (Broyhill) N. Miami Beach
Baker Equip. Engr. Co. (Stanley) St. Petersburg 813-896-0038
Bingham Seed Co. (F. E. Myers Equip.) Jacksonville 904-768-1503
Central Florida Pump & Equip., Inc. (F. E. Myers Equip., Tuflex) Orlando 305-423-3875
Citrus Systems Inc. (Tuflex) Winter Garden 305-656-6858
Collier Equip. Co. (Clark) Naples 813-774-7117
Creel Ford Tractor Co. (F. E. Myers Equip.) Ft. Myers 813-694-2185
DeBra Turf & Industrial Equip. (Heckendorn, Lindig, Olathe) Hollywood 305-921-1919
DeBra Tractor & Improvement Inc. (Heckendorn) Ft. Myers 813-332-4663
DeBra Turf & Industrial Equip. (F. E. Myers Equip., Heckendorn, Lindig, Olathe, Toro) Tampa 813-621-3077
Diversified Auto Supply (Master) Lake Worth 305-967-0900
Epperson & Co. (Stanley) Tampa 813-626-6125
Fletcher Ford Tractor Co. (Clark) Tallahassee 904-576-2808
Florida Tractor Corp. (Satoh) Jacksonville 904-388-6581
Ford Tractor of Brevard (Rhino) Cocoa 305-636-2066
Les-Ray Bobcat Inc. (Clark) West Palm Beach 305-689-9880
Golf Shore Turf Supply (F. E. Myers Equip., Lindig, Richway Prod.) Pensacola 904-968-2183
Head Equip. Sales (Howard Rotavator) Gainesville 904-377-5500
Hector Turf & Garden, Inc. (Cushman/OMC-Lincoln) Miami 305-652-4470
Hornberger Construction & Irrigation (Howard Price) Ocala 904-732-0703
International Hydraulics (Stanley) Miami 305-592-3654
John E. McCausland Co. Inc. (Stanley) Jacksonville 904-358-1975
Omni Controls & Eng. (Thompson Mfg. Co.) Winter Park 305-6471222
Orlando Farm Equipment (Howard Price) Orlando 305-425-6101
Pilot Equip. Co. Inc. (Clark) Jacksonville 904-268-6711
Rays Equip. Co. of S. Florida (Clark) Ft. Lauderdale 305-566-0711
Phil Reed Equip. Co. (Clark) Brandon 813-685-2987
Revels Ford Tractor Co., Inc. (F. E. Myers Equip.) Plant City 813-253-6035
Spencer Engine, Inc. (Kohler Engine) Tampa 813-253-6035
Stanley Equip. Co. (Clark) Ft. Myers 813-936-0161
Strong Enterprises (Tuflex) Miami 305-264-5525
Three Sixty Incorp. (Clark) Orlando 305-425-0557
Tieco (Hahn, Howard Price) Hialeah 305-621-4677
Tieco Gulf Coast, Inc. (Broyhill, Cushman/OMC-Lincoln, Heckendorn, Olathe, Royer) Pensacolo 904-434-5475
Tresca Ind. (Heckendorn, Lindig) Jacksonville 305-946-7300
Tresca Ind., Inc. (Heckendorn, Howard Price) Longwood 305 834-5554
Vermeer Southeast Sales & Service (Vermeer) Orlando 305-295-2020
Vermeer Southeast Sales & Service (Vermeer) Pompano Beach 305-946-7300
West Florida Equip. Co. (Clark) Marianna 904-482-3033
Zaun Equip., Inc. Ft. Myers 813-332-1425 (Broyhill, Cushman/OMC-Lincoln)
Zaun Equip., Inc. Jacksonville (Broyhill, Cushman/OMC-Lincoln, Royer, Toro)
Zaun Equip., Inc. Orlando (Broyhill, Cushman/OMC-Lincoln, Royer)
Zaun Equip., Inc. St. Petersburg 813-521-3571 (Broyhill, Cushman/OMC-Lincoln, Royer)
Zoecon Corp. (Tuflex) Orlando 305-851-0460

## Georgia

Altec Industires, Inc. (Stanley) Forrest Park 404-477-1976
Athens Agricultural Chem. Co. (Broyhill) Athens
Bobcat of Albany (Clark) Albany 912-883-3939
Bobcat of Atlanta (Clark) Conley 404-363-0330
Bobcat of Macon, Inc. (Clark) Macon 912-746-4397
Burdette-Harris, Inc. (Clark) Washington 404-678-1595
Clark Lift of Augusta, Inc. (Clark) Augusta 404-724-8765
Clark Lift of Dalton, Inc. (Clark) Dalton 404-278-1104
Columbus Tractor & Machinery (Rhino) Columbus 404-689-1307
The Cooper Co. (Century Farm) Macon 912-742-2591
Cross Equip. Co. (Broyhill) Albany
Davis Power Equip. (Stanley) Jonesboro 404-477-1976
John Deere Co. (Deere Co.) Conyers 404-922-7040
Fontaine Truck Equip. Co. (Olathe) Forest Park 404-363-9990
Georgia-Florida Pitry. Supply (Clark) Blackshear 912-449-4721
Gold Kist, Inc. (Broyhill) Atlanta
Lawn & Turf, Inc. (Heckendorn, Broyhill, Royer, Olathe, Cushman/OMC-Lincoln) Conyers 404-483-4743
Newton Ford Tractor (Clark) Statesboro 912-764-6167
Pioneer Logging Machinery, Inc. (Clark) Augusta 404-793-5120
Regal Chemical Co. (F. E. Myers Equip., Richway Products) Dunwoody 404-394-0475
Rhinehart Equip. Co. (Clark) Rome 404-232-8962
Sedco, Inc. (Kohler Engine) Atlanta 404-458-8838
Stephenson Chem. Co. (Broyhill) College Park
Stoval & Co., Inc. (Hahn, Howard Price) Atlanta 404-352-1555
Southeast Tractor Corp. (Satoh) Decatur 404-373-5796
Thomas Ford Tractor, Inc. (Clark) Gainesville 404-534-5319
Vermeer Southeast Sales & Service (Vermeer) Marietta 404-689-1307
Wilbur Ward Co. (Clark) Savannah 912-233-8846
Wislar & Co. (Lindig, Cushman/OMC-Lincoln) Atlanta 404-691-4801

## Hawaii

Amfac Dist. Derocher (Stanley) Honolulu 808-839-9021
Bacon-Universal Co., Inc. (Clark) Hilo 808-935-6855
Bacon-Universal Co., Inc. (Lindig, Clark) Honolulu 808-839-7202
Bacon-Universal Co., Inc. (Clark) Wailuku, Maui 808-003-9159
Farmtec (Broyhill) Honolulu
Grace Brothers, Ltd. (Vermeer) Honolulu 808-671-2661
Hayman Co., Inc. (Howard Price, Royer) Waipahu 808-671-2811
Inter Island Equipment, Inc. (Cushman/OMC-Lincoln, Toro) Hilo
Inter Island Equipment, Inc. (Cushman/OMC-Lincoln) Waipahu 808-671-3911
Inter Island Equipment, Inc. (Cushman/OMC-Lincoln) Lihue 808-245-4057
Inter Island Equipment, Inc. Kahului, Maui
Small Engine Clinic (Kohler Engine) Aiea 808-488-0711

## Idaho

Ace Supply, Inc. (Howard Rotavator) Caldwell
The Boyd Martin Co. (Lindig, Broyhill, Royer, Cushman/OMC-Lincoln), Boise 208-376-8891
Carlson Co. (Hahn) Boise 208-375-8488
Coast Crane & Equip. (Stanley) Boise 208-376-7365
Floyd Lilly Co. (Broyhill) Twins Falls
Foulger Equip. Co. (Clark) Pocatello 208-233-5647
Foulger Equip. Co. of Idaho (Clark) Boise 208-343-3603
General Implement Distributors (Rhino) Boise
Hodgson Ford Tractor Co. Lewiston 208-743-4571 (Clark)
Hodgson Ford Tractor Co. Craigmont 208-924-5764 (Clark)
Industrieal Equip. & Repair, Inc. (Clark) Twin Falls 208-734-3670
Lewiston Equip. Inc. Lewiston 208-743-8567 (Clark)
Lewiston Equip. Inc. Coeur D'Alene 208-667-1518 (Clark)
Sta-Rite Ind. (F. E. Myers Equip.) Twin Falls 208-733-8802
Vermeer Inter-mountain (Vermeer) Boise 208-376-8891

## Illinois

Alexis Farm Supply, Inc. (Clark) Alexis 309-482-6622
Agrico Chemical Co. (Broyhill) Mattoon
Allied Farm Equipment, Inc. (Satoh, Broyhill, Howard Rotavator) Belvidere 815-544-2151
Allied Farm Equip., Inc. (Broyhill) Springfield
Arrow Equipment Co. (Arctic Mizer) Chicago
Atlas Material Bldg. Equip., Inc. (Clark) Schiller Park 312-678-3450
Aurora Truck Body, Inc. (Stanley) Aurora 312-897-4300
Brue Municipal Equip., Inc. (Olathe) Glenview 312-724-8700
Centenniel Equipment (Clark) Rock Island 309-787-6108
Ches-Gro, Inc. (Broyhill) Hickory Hills 312-599-6665
Chicago Toro Turf-Irrigation, Inc. (Toro) Itasca 312-773-2110
Clarklift of Quincy, Inc. (Clark) Quincy 217-224-6600
George A. Davis, Inc. (Lindig, Hahn, Howard Price) Chicago 312-763-6363
D-Z Transfer, Inc. (Clark) Huntley 312-669-5401
John Deere Co. (Deere Co.) East Moline 309-792-6779
Drake-Scruggs Equipment (Lingid, Cushman/OMC-Lincoln, Toro) Decatur 217-428-3485
Drake-Scruggs Equipment (Lindig) Springfield 217-753-3871
Dutch Valley Equipment Sales, Inc. (Howard Price) South Holland 312-877-6500
Eighmy Equip. Co. (Clark) Rockford 815-964-6706
Eighmy Equip. Co. (Clark) E. Peoria 309-694-1411
Eighmy Equip. Co. (Clark) Decatur 217-875-1781
Florist Products, Inc. (F. E. Myers Equip.) Des Plaines 312-437-5103
Forster Implement Co. of Dixon (Clark) Dixon 815-288-4441
Forster Lawn-Leisure (Clark) DeKalb 815-758-1600
L. E. German Implement Co. (Rhino) Princeville 309-385-4686
Hennessey-Forrestal Ill., Inc. Springfield 217-544-3900
Hillsman Equipment Co. (Arctic Mizer) Melrose Park
Illinois Lawn Equipment (Heckendorn, F. E. Myers Equip., Cushman/OMC-Lincoln, Royer) Orland Park 312-349-8484
Jacksonville Chemicals (Master) Jacksonville
K & C Equip., Inc. (Clark) E. Dix 618-266-7211
Kemper Industrial Equip. Co. (Clark) Champaign 217-356-5555
Kipp's Lawn Mower Sales (Howard Price) Naperville 312-355-3800
Knorr & Walker (Clark) Carthage 217-357-2167
Lena Sales, Inc. (Clark) Lena 815-369-4648
Little Wheels Turf & Equip., Inc. (Cushman/OMC-Lincoln) Peoria 309-686-1446
O. O. Mallegg, Inc. (Olathe) Chicago 312-372-4868
Matarelli Equip. (Howard Price) Peoria 309-676-4448
Andrew McCann (Thompson Mfg. Co.) Dolton 312-841-8300
Midwest Engine Warehouse (Kohler Engine) Elmhurst 312-833-1200
Nelson Bros. Equip., Inc. (Clark) Geneso 309-944-5174
Permalawn, Inc. (Howard Price) Evanstown 312-864-5045
Pontiac Farm Store (Clark) Pontiac 815-844-6154
Popejoy Sales-Service, Inc. (Clark) Normandy 815-379-2373
Professional Turf Specialties (Hahn, F. E. Myers Equip., Richway Products) Bloomington 309-454-2467
Roseman Tractor Equipment Co. (Arctic Mizer) Evanston
Rowland Machinery Co. (Olathe) Springfield 217-789-7711
Rowland's Sales & Service (Howard Price) Barrington 312-381-1084
Rural Equip. Co. (Clark) Macomb 309-833-2982
Leon Short & Sons, Inc. (Heckendorn, Royer) East Peoria 309-694-1493
Spyder of Illinois (Foxcroft) McHenry 815-344-0666
Streator Farm Mart, Inc. (Clark) Streator 815-672-0007
Turf Products Ltd. (Richway Products) West Chicago 312-668-5537
Turf Products (Thompson Mfg. Co.) West Chicago
Twait, Inc. (Clark) Oswego 312-554-3188
Vandalia Implement, Inc. (Clark) Vandalia 618-283-4600
Vermeer Sales & Service (Vermeer) Batavia 312-879-8283
Vermeer Sales & Service of Central Illinois (Vermeer) Eureka 309-467-3716
Warner Farm Service (Clark) Mt. Carroll 815-244-2355
Watson Lawn Equipment (Howard Price) Joliet 815-729-1070
Robert Wille, Inc. (Clark) Momence 815-472-4824

## Indiana

Agro-Turf (Hahn) Evansville
Athens Oliver Sales, Inc. (Clark) Athens 219-223-2790
Blocker Propane Equip. Co. (Broyhill) Indianapolis
Briggs Equipment, Inc. (Clark) Greensburg 812-663-2566
Bright Equip., Inc. (Clark) Indianapolis 317-787-2201
Butts Enterprises (Clark) Brazil 812-446-2322
Cordes Hardware Co., Inc. (Clark) Seymour 812-522-3918
Deeds Equip. Co., Inc. (Stanley) Lawrence 317-545-3331
Dehaai Industrial (Clark) Lafayette 317-474-4452
Dick & Freds Sales & Service (Clark) La Porte 219-362-9502
Farmers Marketing Assoc. (Clark) Columbus 812-379-9501
Gragg Equip. Co. (Clark) Warsaw 219-267-8651
Greentown Equip., Inc. (Clark) Greentown 317-628-3305
Hallenberger, Inc. (Clark) Evansville 812-477-5555
Hull Lift Truck, Inc. (Clark) Elkhart 219-293-8651
Johnson Sales & Service (Clark) West Lebanon 317-893-4462
Kenney Machinery Corp. (Toro, Lindig, F. E. Myers Equip., Richway Products, Cushman/OMC-Lincoln) Indianapolis 317-293-4793
Maier Equip. Co. (Clark) Ft. Wayne 219-489-5511
Merkamp Sales & Service (Clark) Richmond 317-962-2048
R & J Oliver Sales (Clark) Lebanon 317-482-3361
Reco Sales, Inc. (Wheel Horse) Indianapolis 317-297-3660
Reid Holcomb Co., Inc. (Olathe) Indianapolis 317-639-3551
Riley Lawn & Golf Equipment (Olathe, Howard Price, Royer) Indianapolis 317-291-2280
Riley Lawn & Golf Equipment (Olathe, Howard Price, Royer) Fort Wayne 219-484-9605
Stafford Ford Equip. (Clark) Logansport 219-753-6291
Stanley Equip. & Supply (Clark) Anderson 317-643-4222
Stover-Winsted Co., Inc. (Century Farm, Broyhill) Indianapolis 317-786-4351
Summit Power Equipment (Lindig, F. E. Myers Equip., Toro, Cushman/OMC-Lincoln) Fort Wayne 219-484-2507
Vermeer of Indiana, Inc. (Vermeer) Noblesville 317-842-1040
Wabash County Farm Bureau (Clark) Wabash 219-563-1191
Western Sales (Broyhill) Monticello
Wood Farm & Industrial Supply (Clark) Versailles 812-689-5800

## Iowa

Ahrendt & Clark, Inc. (Clark) Sibley 712-754-3741
All Wheel Drive Co. (Clark) Sioux City 712-255-5018
H. Batcheller Farm Store (Broyhill) Sioux City
Big Bear Turf Equipment (Howard Price, Richway Products) Des Moines
Bill Bone Motors (Clark) Oskaloosa 515-673-8283
Joe Bradley Equip. Co. (Clark) Algona 515-295-2421
Brakke-Wollums Implement, Inc. (Clark) Mason City 515-423-2412
Brayton Chem., Inc. (Broyhill) W. Burlington
Brokan Equip. (Clark) Monticello 319-465-5422
Brokan Supply (Broyhill) Fort Dodge
Burg Implement (Clark) Monticello 319-465-5422
Capital City Equip. Co. (Clark) Waukon 319-568-4571
Central States Turf Equipment & Supply Co. (F. E. Myers Equip., Hahn) Des Moines 515-277-8500
Central Tractor Parts Co. (Broyhill) Des Moines
Clay Co. Equip., Inc. (Clark) Spencer 712-262-5870
Cline Truck & Equip. (Clark) Iowa City 319-338-9455
Corky's Corner (Clark) Marcus 712-376-4812
Creston Implement Co. (Clark) Creston 515-782-8436
Da-Mar Implement, Inc. (Clark) Orange City 712-737-4838
Davis Farm Equip. Co. (Clark) Tipton 319-886-6175
Davis Implement Co. (Clark) Vinton 319-472-4701
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# Equipment Dealers

Industrial Supplies, Inc. (Cushman/OMC-Lincoln) Des Moines 515-288-7446
Little Wheels, Ltd. (Heckendorn) Iowa City 319-354-1357 (Cushman/OMC-Lincoln, Broyhill, Royer)
Mid-States Equip. (Broyhill) Lake View
Morrison Equipment, Inc. (F. E. Myers Equip.) Des Moines 515-244-2868 (Olathe)
Nevada Farm Center (Rhino) Nevada 515-382-6533
RPW, Inc. (Kohler Engine) Des Moines 515-265-8151
P. W. Stankee Co. (Satoh) Wheatland 319-374-2311
Tri-State Toro (Lindig, Cushman/OMC-Lincoln, Toro) Davenport 319-326-4416
Vermeer Sales & Services (Vermeer) Pella 515-628-2000

## Kansas

Briggs Turf Farm (Foxcroft) Stilwell 913-681-2500
Champion Turf Equipment, Inc. (F. E. Myers Equip.) Wichita 316-943-0283 (Cushman/OMC-Lincoln)
Cisco (Broyhill) Salina
Fairbank Equip., Inc. (Broyhill) Wichita
Kerr Implement Warehouse (Rhino) Garden City 316-276-3441
Landsco Corp. (Lindig, Hahn) Salina 913-825-0578
The Lee Co. (Broyhill) Salina
Medart Engines & Parts of Kansas (Kohler Engine) Lenexa 913-888-8828
Murphy Machinery Co. (Olathe) Wichita 316-942-8381
Vermeer Sales & Services (Vermeer) Olathe 913-782-3655

## Kentucky

Ag Spray Equip., Inc. (Broyhill) Hopkinsville
Brentom Corp. (Lindig, Howard Price) Louisville 502-491-0865
Brinley-Hardy Co. (Century Farm) Louisville 303-744-6371
Bryant Equipment, Inc. Louisville 502-491-8000
Bunton Seed Co. (F. E. Myers Equip., Broyhill) Louisville 502-584-0136
Jack Dayton & Son, Inc. (Cushman/OMC-Lincoln, Olathe, Broyhill, Royer) Louisville 502-582-2505
Ky-Inna Turf Supply Co., Inc. (Heckendorn, Hahn) Louisville 502-491-8400
Vermeer South Central Sales & Service (Vermeer, Olathe) Bowling Green 502-842-8461

## Louisiana

Emery Equip. Sales & Rentals, Inc. (Stanley) Baton Rouge 504-293-0541
Emery Equip. Sales & Rentals, Inc. (Stanley) Shreveport 318-425-7434
Grayson Co. of Louisiana, Inc. (Kohler Engine) Shreveport 318-222-3211
Gulf Shore Turf Supply (Lindig) Baton Rouge 504-293-6763
Hydradyne Hydraulics, Inc. (Stanley) Belle Chasse 504-394-7250
Reliable Distributors (Royer) River Ridge 504-737-9690
Southern Specialty Sales Co., Inc. (Heckendorn, Richway Products, Royer, Cushman/OMC-Lincoln) New Orleans 504-486-6101
Vermeer Sales & Service (Vermeer) Baton Rouge 504-355-4421
Wilbanks Farm Equipment (Broyhill) Shreveport

## Maine

Yerxa's, Inc. (Lindig, F. E. Myers Equip., Toro) South Portland 207-799-2241

## Maryland

Adams Equipment (Lindig, F. E. Myers Equip., Cushman/OMC-Lincoln) Baltimore 301-668-0500
Adams Equipment (Cushman/OMC-Lincoln, Lindig, F. E. Myers Equip., Broyhill, Toro) Silver Spring 301-585-1322
Agrotec Services, Inc. (Broyhill) Salisbury
S. M. Christholf & Sons (Arctic Mizer) Timonium
Cornell Chemical (Richway Products) Baltimore
G. L. Cornell Co. (Heckendorn, Cushman/OMC-Lincoln, Royer) Gaithersburg 301-948-2000
Engine Distributors, Inc. (Ford) Gambrills 301-987-4740
C. V. Foster Equipment Co. (Kohler Engine) Baltimore 301-235-3351
General Supply & Equip. Co. (Olathe) Baltimore 301-235-6300
Lyons & Lyons Sales Co., Inc. (Howard Price) Glen Arm 301-665-6500
N.J. Richardson & Son, Inc. (Kubota) Baltimore 301-944-3200
Vermeer Sales & Service (Vermeer) Anapolis Junction 301-498-5200

## Massachusetts

Balher Corp. (Heckendorn, Arctic Mizer) Billerica 617-667-2171
Clapper Co. (Lindig, F. E. Myers Equip., Toro, Cushman/OMC-Lincoln) West Newton 617-244-7900
W. J. Connell Co. (Kohler Engine) Newton Upper Falls 617-332-3630
O. R. Cote Co. (Arctic Mizer) Springfield
Doering Equip. Corp. (Stanley) Westborough 617-366-8271
Griffin Greenhouse Supplies, Inc. (Royer) Tewksbury 617-851-4343
The Magovern Co., Inc. (Cushman/OMC-Lincoln, Royer) Pittsfield 413-443-4459
R. F. Morse & Sons, Inc. (Hahn) W. Wareham 617-295-1553
Sawtelle Bros., Inc. (Olathe, Howard Price, Royer, Cushman/OMC-Lincoln) Swampscott 617-599-4856
J. S. Woodhouse Co., Inc. (Howard Rotavator) W. Springfield 413-736-5462

## Michigan

Burke Rental Service, Inc., (Royer) Sterling Heights 313-939-4400
Buryl Hill, Inc. (Foxcraft) Farmington 313-478-1000
Calumet Industrial Equip. (Arctic Mizer) So. Holland
Ellis Sales, Inc. (Cushman/OMC-Lincoln) Kalamazoo 616-375-3535
Ferguson's Lawn Equipment (Heckendorn) Traverse City 616-946-2440
Golf Car Distributors (Cushman/OMC-Lincoln) Pontiac 313-338-0425
Lawn Equipment Corp. (Heckendorn, Hahn, Howard Price) Royal Oak 313-398-3636
Leckler's, Inc. (Lindig) LaSalle 313-242-2344
W. F. Miller Co. (F. E. Myers Equip., Mott Corp., Royer, Olathe) Birmingham 313-647-7700
W. F. Miller (F. E. Myers Equip., Royer) Grand Rapids 616-241-4481
Northern Contractors Equip., Inc. (Olathe) Traverse City 616-946-8220
Spartan Distributors, Inc. (Lindig, Cushman/OMC-Lincoln, Toro) Sparta 616-887-7301
Sure Distributors Inc. (Spartan) Lansing 517-321-7451
Turfgrass, Inc. (Richway Products) South Lyon
Vermeer Sales & Service (Vermeer) Jackson 517-750-3783
Walker Hydraulic Tools (Stanley) Garden City 313-525-0163
Wilkie Turf Equipment Co. (Cushman/OMC-Lincoln, Toro) Pontiac 313-372-8800
Floyd Wonser Supply Co. (Century Farm) Battle Creek 616-979-1151

## Minnesota

Air Hydraulic Systems, Inc. (Stanley) Minneapolis 612-377-2342
Allied Farm Equipment (Broyhill) Eagan
Carl A. Anderson, Inc. of Minn. (Kohler Engine) St. Paul 612-452-1450
Aqua Engineering (Thompson Mfg. Co.) Eden Prairie 612-941-1138
Coffey's Power Equip. Co. (Arctic Mizer) Hopkins
Cushman Motor Co., Inc. (Cushman/OMC-Lincoln, Broyhill) Minneapolis
John Deere Co. (Deere Co.) Minneapolis 612-887-6200
Falls Equipment, Inc. (Rhino) Red Lake Falls 218-253-2002
R. L. Gould & Co. (Lindig, Cushman))OMC-Lincoln) St. Paul 612-484-8411
Itasca Equipment Co. (Arctic Mizer) Minneapolis
Kromer Co. (F. E. Myers Equip., Heckendorn, Hahn, Howard Price) Mound 612-472-4167
Lindsay Brothers Co. (Century Farm, Howard Rotavator) Minneapolis 612-339-1441
Midland Cooperative, Inc. (Broyhill) Minneapolis
Minnesota Toro, Inc. (Toro, Broyhill, Royer) Minneapolis 612-475-2200
Truck Utilities Mfg. Co. (Olathe) St. Paul 612-484-3305
Vermeer Sales & Service (Vermeer) Burnsville 612-890-6144
Watkins Products, Inc. (Broyhill) Winona
Zeco Co. (Arctic Mizer) Minneapolis

## Mississippi

Farmers, Inc. (Broyhill) Greenville
Pedigo Equip. Corp. (Stanley) Jackson 601-939-6970
Vermeer Sales & Service (Vermeer) Pearl 601-932-3226

## Missouri

Austin Products, Inc. (Rhino) North Kansas City 816-474-6119
Beckmann Turf & Irrigation (F. E. Myers Equip., Lindig, Toro) Chesterfield 314-532-3649
Causco, Inc. (Stanley) Independence 816-254-9850
Causco St. Louis (Stanley) St. Louis 314-997-5990
Champion Turf Equipment, Inc. (F. E. Myers Equip., Toro, Cushman/OMC-Lincoln) Kansas City 816-333-8000
Champion Turf Equipment, Inc. (F. E. Myers Equip.) Springfield 417-869-2551
John Deere Co. (Deere Co.) Kansas City 816-361-4000
Farmland (Broyhill) Kansas
Fox Vehicles (Cushman/OMC-Lincoln) St. Louis 314-726-3260
Carl E. Keiser (Broyhill) Stafford
Klughartt-Thornhill Machinery Co. (Century Farm) Kansas City 816-421-6296
Landsco Corp. (Lindig) Grandview (no phone)
Links Nursery, Inc. (Hahn) St. Louis 314-432-8592
Medart Engines & Parts (Kohler Engine) St. Louis 314-652-2200
Out Door Equipment Co. (Olathe, Heckendorn, Royer, Cushman/OMC-Lincoln, Broyhill) Maryland Heights 314-569-3232
Ozark Farm Equipment (Howard Price) Cuba
Dick Proctor Imports, Inc. (Satoh) St. Louis 314-487-2085
Robison's Lawn & Golf (Heckendorn, Broyhill, Richway Products, Royer, Olathe, Howard Price) Grandview 816-765-3333
Vermeer Sales & Service (Vermeer) Manchester 314-227-2211

## Montana

Agricultural Mgmt. Serv. (Broyhill) Great Falls
Agro Supply (Broyhill) Billings
Automotive and Industrial (Royer) Billings 406-245-6443
Horvick Mfg. Co. (Broyhill) Moorhead
Midland Implement Co. (Howard Rotavator, Century Farm, Lindig, Satoh, Toro, Cushman/OMC-Lincoln) Billings 406-248-7771
Original Equipment, Inc. (Kohler Engine) Billings 406-245-3081
Parker-Montana Co. (Rhino) Billings 406-245-6627
Turf-Aid Distributing Co. (Cushman/OMC-Lincoln) Billings 406-656-8008
Vermeer of Montana (Vermeer) Billings 406-248-7710

## Nebraska

Asche Sales (Howard Price) Creston 402-285-0260
Big Bear Equipment (Lindig, Richway Products, Arctic Mizer, Cushman/OMC-Lincoln) Omaha 402-331-2220
Dultmeier Sales (Master) Omaha 402-333-1444
Heinzman Engineering, Inc. (Hahn) Grand Island 308-382-8020
J-Mac Corp. (F. E. Myers Equip., Howard Price) Omaha 402-331-5121
Jirdon Agri Chemicals, Inc. (F. E. Myers Equip., Broyhill) Gering 308-436-2166
Jirdon Agri Chemicals, Inc. (F. E. Myers Equip., Broyhill) Morrill 308-247-2129
Jirdon Agri-Chem (Broyhill) Morrill
Kearney Farm Service (Broyhill) Kearney
A. H. Lock Co. (Century Farm) Lincoln 402-432-1445
Midwest Ag. Warehouse (Broyhill) Fremont
Midwest Toro (Cushman/OMC-Lincoln, Toro, Broyhill, Royer) Omaha 402-331-0500
McShane Corp. (Arctic Mizer) Omaha
RPW, Inc. (Kohler Engine) Omaha 402-339-4944
Vermeer Sales & Service (Vermeer) Papillion 402-331-7755

## Nevada

Cartania, Inc. (Cushman/OMC-Lincoln) Las Vegas 702-735-6141
Las Vegas Fertilizer (Thompson Mfg. Co.) N. Las Vegas 702-649-1551
The Norton Corp. (Lindig, Broyhill, F. E. Myers Equip., Cushman/OMC-Lincoln) Las Vegas 702-876-8330
Reno Ranch & Sprinkler (Thompson Mfg. Co.) Reno 702-826-5022

## New Hampshire

John L. Cyr (Royer) Windham 603-893-8003
R. N. Johnson, Inc. (Century Farm) Walpole 603-756-3321
Turf Industries (Thompson Mfg. Co.) Bristol 603-744-2712
Turf Specialties, Inc. (Hahn) Hooksett 603-436-8202

## New Jersey

Caldwell Tractor & Equipment (Lindig) Fairfield 201-227-6772
Double Eagle Golf Products (Cushman/OMC-Lincoln) Jamesburg 201-521-2500
The Durham Co., Inc. (Kohler Engine) East Brunswick 201-238-3200
Ferti-Soil Co. (Richway Products, Hahn) Rahway 201-388-0100
Jep Sales (Lindig, Howard Price) Yardville 609-585-2300
Lawn-A-Mat of Mountainside (Broyhill) Millington
Lehara Equipment Co., Inc. (Mott Corp.) East Brunswick 201-238-3322
Wilfred Mac Donald, Inc. (Olathe, Howard Price, Broyhill, Cushman/OMC-Lincoln) Clifton 201-471-0244
Matcha Machinery Co. (Arctic Mizer) Fairfield
Wm. Potter & Son (Howard Price) Middletown
L. D. Sealy Co. (Arctic Mizer) Wamamassa
L. D. Seely Co. (Olathe) Ocean 201-531-8511
Sherwood Chemical (Tuflex) Westerville 609-848-6811
Storr Tractor Co. (F. E. Myers Equip., Toro, Royer, Cushman/OMC-Lincoln) Westfield 201-232-7800
Vermeer Sales & Service (Vermeer) Mount Holly 609-267-6600

## New Mexico

Bell Co., Inc., (Cushman/OMC-Lincoln) Albuquerque 505-243-7841
Solr Rig Sales & Service (Stanley) Hobbs 505-393-9544
Southwest Toro (Lindig, F. E. Myers Equip., Toro) Albuquerque 505-344-2356
Southwest Toro New Mexico, Inc. (Cushman/OMC-Lincoln, Broyhill, Royer) Albuquerque 505-345-8676
Spitzer Electrical Co. (Kohler Engine) Albuquerque 505 247-4233
Vermeer Sales & Service of New Mexico (Vermeer) Albuquerque 505-344-5141

## New York

Abele Tractor & Equipment Co., Inc. (Hahn) Albany 518-438-4446 (Howard Price)
Allied Farm Equip., Inc. (Broyhill) Syracuse
Brooks Gravely Co., Inc. (Howard Price) Rochester 716-424-1660
Bruedan Corp. (Cushman/OMC-Lincoln) Chester 914-469-2275
Byrne Compressed Air Equip. (Stanley) Bronx 212-292-7726
John Deere Co. (Deere Co.) Syracuse 315-432-9300
Eaton Equipment Co. (F. E. Myers Equip., Toro, Royer, Cushman/OMC-Lincoln) Hamburg 716-649-2020
Grassland Equipment & Irrigation (Toro, Lindig, F. E. Myers Equip., Cushman/OMC-Lincoln) Latham 518-785-5841
Griffin Greenhouse Supplies, Inc. (Royer) Albany 518-489-8419
Haverstick Golf & Tractor, Inc. (Royer, F. E. Myers Equip., Toro, Cushman/OMC-Lincoln) Syracuse 315-457-9271
J & G Equipment (Master) No. Bellmore
Wm. Kroemer & Sons (Lindig, Hahn, Howard Price) Hicksville, L.I. 516-931-0500
Levalley McLead (Arctic Mizer) Birmingham
Lindstrom Electric Corp. (Stanley) Syracuse 315-437-2538
The Magovern Co., Inc. (Cushman/OMC-Lincoln, Royer, Olathe) No. White Plains 914-949-1310
Malvese Mowers & Equip. (Cushman/OMC-Lincoln, Royer, Olathe) Hicksville, L.I. 516-681-7600
S. V. Moffet (Heckendorn, Cushman/OMC-Lincoln) Rexford 518-370-4054

S. V. Moffet (Heckendorn, Lindig, Richway Products, Cushman/OMC-Lincoln, Broyhill) West Henrietta 716-334-0100
National Farmers Elevator (Master) New York
Orag Inter Ltd. (Olathe) Flushing 212-353-8699
Howard Premo, Inc. (Royer) Masseno 315-769-2377
Seneca Supply Co. (Arctic Mizer) Ithaca
Storr Tractor Co. (Cushman/OMC-Lincoln, F. E. Myers Equip., Royer) Ronkonkoma 516-981-5222
Tri-Lakes Equip. Co. (Arctic Mizer) Cazenovia
Tudor & Jones (Century Farm) Weedsport 315-834-6661
Uebler's (Rhino) Oneida 315-363-4510
Vermeer Sales & Service (Vermeer) Castleton 518-732-7201
Vermeer Sales & Service of Western N.Y. (Vermeer) Cheektowaga 716-634-0944
Vermeer Sales & Service (Vermeer) East Moriches, L.I. 516-878-4000
Vermeer Sales & Service, Inc. (Vermeer) East Syracuse 315-437-7095
West Putnam Tractor Corp. (Lindig) Baldwin Place 914-628-6262
Ira Wickes, Inc. (F. E. Myers Equip.) Spring Valley 914-354-3400
York Chemical Co., Inc. (Tuflex) Garden City Park, L.I. 516-741-4301

## North Carolina

Automotive Electric Assoc., Inc. (Kohler Engine) Charlotte 704-377-6991
Baker Equip. Engr. Co. (Stanley) Charlotte 704-372-2040
Eastern Turf Equipment, Inc. (Hahn) Fayetteville 919-483-0179
Engine Service Products (Master) Charlotte
Porter Brothers (Lindig, Broyhill, Olathe, Cushman/OMC-Lincoln, Mott Corp., F. E. Myers Equip., Richway Products, Heckendorn) Shelby 704-482-3424
Revels' Tractor Co., Inc. (Howard Price) Fuquay-Varina 919-552-5697
E. J. Smith & Sons Co. (Satoh, Cushman/OMC-Lincoln, Toro, Royer) Charlotte 704-394-3361
Smith Hardware Co. (Century Farm) Goldsboro 919-735-6281
Vermeer Carolinas Sales & Service (Vermeer) Charlotte 704-333-4647
Vermeer Carolinas Sales & Service (Vermeer) Fayetteville 919-484-5438

## North Dakota

Butler Industrial Products & Irrig. (Cushman/OMC-Lincoln) Fargo 701-235-6454
Butler Irrigation & Indust. Div. (Cushman/OMC-Lincoln) Bismark 701-223-0890
Minot Coleman Dist. (Broyhill) Minot
Mon-Dak Chemical & Supply, Inc. (F. E. Myers Equip.) Minot 701-852-1268
Vermeer Sales & Service (Vermeer) Turtle Lake 701-448-2593
Westland Oil Co. (Broyhill) Minot

## Ohio

ABS Contractors Supply Co. (Stanley) Cincinnati 513-825-5400
Allied Farm Equipment (Broyhill) Columbus
Allied Farm Equipment (Broyhill) Youngstown
Austin Products, Inc. (Rhino) Columbus 614-276-4828
Baker Vehicle Systems, Inc. (Cushman/OMC-Lincoln) Macedonia 216-467-2250
Brooklyn Tractor & Mower (Lindig, Howard Price) Cleveland 216-661-2220
Century Toro Dist., Inc. (Cushman/OMC-Lincoln, Richway Products, Toro) Toledo 419-476-7503
Century Toro Dist., Inc. (Cushman/OMC-Lincoln, Richway Products) Cincinnati 513-563-2460
Century Toro Dist., Inc. (Cushman/OMC-Lincoln, Richway Products) Columbus 614-294-1631
Earl J. Crane (Lindig) Tiffin 419-447-8313
Dayton Ford Tractor (Lindig) Vandalia 513-898-1352
John Deere Co. (Deere Co.) Columbus 614-276-6171
Flack Equipment Co. (Olathe) Dayton 513-461-5610
Gardner, Inc. (Kohler Engine) Columbus 614-488-7951
Globe Chemicals (Broyhill) Toledo
Hayward Distributing Co. (Satoh) Columbus 614-221-5323
Howard's Sales, Inc. (Cushman/OMC-Lincoln) Columbus 614-443-4613
Krigger & Co., Inc. (Heckendorn, Royer, Cushman/OMC-Lincoln) Macedonia 216-467-2176
Lakeshore Equip. & Supply Co. (Broyhill) Elyria 216-323-7544
Lee Road Nursery (Broyhill) Shaker Heights 216-561-3786
Mitchell Equipment Co. (Howard Rotavator) Dublin 406-248-7771
Moon Equipment Co. (Heckendorn, F. E. Myers Equip., Royer, Cushman/OMC-Lincoln) Cincinnati 513-771-1200
Moon Equipment Co. (Heckendorn) Columbus 614-443-7673
Neinberg Supply Co. (Broyhill) Glandorf
Schaefer Turf & Irrigation (Toro) Solon 216-248-2990
Stark Equipment (Howard Price) N. Canton 216-499-5454
Stove-Winsted Co., Inc. (Century Farm) Columbus 614-276-5331
Thompson & Hamilton, Inc. (Wheel Horse) Columbus 614-486-2993
Toledo Turf Equipment Co. (Heckendorn, Howard Price, Cushman/OMC-Lincoln) Toledo 419-473-2503
Toro Distributing (Richway Products) Solon
J. J. Turner, Inc. (Royer, Olathe) Cleveland 216-481-9308
Universal Cooperatives, Inc. (Master) Alliance
Van Atta Seed & Implement (Lindig) Cincinnatie 513-541-2051
Vermeer Sales & Service (Vermeer) Findlay 419-422-3404
Water Supplies, Inc. (F. E. Myers Equip.) Ashland 419-322-1565

## Oklahoma

Alva Vet Supply (Broyhill) Alva
Paul Blakeney Co. (Richway Products, Royer) Oklahoma City 405-528-7577
Dixon Distributors, Inc. (Century Farm) Oklahoma City 405-232-8348
Justice Golf Car Co., Inc. (Cushman/OMC-Lincoln) Oklahoma City 405-634-8444
Mico, Inc. (Kohler Engine) Tulsa 918-627-1448
Muskogee Seed Co. (Broyhill) Muskogee
Oklahoma Lawn Sprinkler (Thompson Mfg. Co.) Oklahoma City 405-721-1454
The Rubber House of Oklahoma City, Inc. (Stanley) Oklahoma City 405-947-6741
Turf Equipment (Richway Products) Tulsa
Vermeer Sales of Oklahoma (Vermeer) Moore 405-794-6644
Wait Sales Co. (Lindig, Cushman/OMC-Lincoln, Toro) Tulsa 918-584-3334
R. A. Young & Co. (Stanley) Tulsa 918-835-4404

## Oregon

Ackley Hydraulic Tool Co. (Stanley) Portland 503-281-8991
Auto-Rain (Thompson Mfg. Co.) Portland 503-283-4184
Baltz & Son Co. (Cushman/OMC-Lincoln) Portland 503-256-1453
Columbia Equip. Inc. (Olathe) Portland 503-288-6981
John Deere Co. (Deere Co.) Portland 503-667-1191
Farmaterials, Inc. (Broyhill) Baker
Farmers Coop Oil (Broyhill) McMinnville
Farmland (Broyhill) Pendleton
I-D, Inc. (Century Farm) Portland 503-226-7966
Oregon Toro (Lindig, F. E. Myers Equip., Toro, Cushman/OMC-Lincoln) Tigard 503-639-7602
Pacific Supply Cooperative (Broyhill) Portland
Truck and Industrial Equip. Co. (Kohler Engine) Portland 503-234-8401
R. M. Wade & Co. (Satoh, Howard Rotavator) Beaverton 503-641-1865

## Pennsylvania

Baker Equipment Eng. Co. (Stanley) Pottstown 215-323-8000
Brawley Distributing Co. (Wheel Horse) New Cumberland 717-938-1831
Cambria Tractor & Equipment (Lindig) Ebensburg 814-472-7300
Dingfelder Sales & Service (F. E. Myers Equip.) Northeast 814-725-4494
E. C. Geiger Inc. (Lindig) Harleysville 215-256-6511
Gran-Turk Sanitation Equip. Co. (Royer) Warrington 215-674-0600
E. H. Griffith Inc. (Lindig, Toro) Pittsburgh 412-271-3365
Hamilton Equipment, Inc. (Master, Century Farm) Ephrata 717-733-7951
Krigger & Co., Inc. (Broyhill, Olathe, Heckendorn, Cushman/OMC-Lincoln) Pittsburgh 412-931-2176
Lawn & Golf Supply Co., Inc. (F. E. Myers Equip., Royer, Olathe) Phoenixville 215-933-5801
Pascoe Equipment Co., Inc. (F. E. Myers Equip.) Export 412-468-4646
Pascoe Equipment Co., Inc. (F. E. Myers Equip.) Oakdale 412-923-2544
Philadelphis Toro Co. (Toro) Doylestown 215-345-7200
Pitt Auto Electric Co. (Kohler Engine) Pittsburgh 412-766-9112
Plack & Crandall Ford Inc. (F. E. Myers Equip.) Edinboro 814-734-1616
Rhodes Equipment Co., Inc. (Howard Price, Heckendorn, Hahn, Cushman/OMC-Lincoln) Southampton 215-677-6000
Stull Co. (Satoh) Coraopolis 412-262-1405
Turf & Garden Equipment Co. (Howard Price) Hershey 717-534-2590

## Rhode Island

Allens Seed Store, Inc. (Hahn) Slocum 401-294-9246
Spyder Sales of New England (Foxcroft) West Kingston 401-789-1978

## South Carolina

Blakely's Lawn & Garden Ctr. (Howard Price) Greenville
Conway Power Equipment, Inc. (Howard Price) Conway 803-248-4377
Herrington, Inc. (Howard Price) Hollywood 803-889-2206
Turf & Garden (Howard Price) Murrells Inlet

## South Dakota

B & M Enterprises (Foxcroft) Rapid City 605-348-6999
C & R Supply (Broyhill) Sioux Falls
Dakota Hydraulics (Stanley) Huron 605-352-9363
Dakota Turf Supply (Lindig, Cushman/OMC-Lincoln) Sioux Falls 605-336-1873
Fire Protection Co. (F. E. Myers Equip.) Aberdeen 605-225-9376
Hills Gas & Appliance (Broyhill) Yankton
Vermeer Sales & Service (Vermeer) Rapid City 605-343-7544
Warne Chemical & Equipment Co. (Broyhill) Rapid City

## Tennessee

Athens Plow Division (Rhino) Athens 615-745-3561
Automotive Electric Corp. (Kohler Engine) Memphis 901-332-3700
Booth, Inc. (Howard Price) Collierville 901-853-8521
Central South Turf Distributors (Lindig, F. E. Myers Equip., Toro) Nashville 615-832-7725
John Deere Co. (Deere Co.) Memphis 901-775-1050
Hardison Seed Co. (Hahn, Cushman/OMC-Lincoln) Nashville 615-256-2659
King-Wallace, Inc. (Century Farm) Memphis 901-942-3236
Bob Ladd & Assoc., Inc. (Cushman/OMC-Lincoln) Memphis 901-324-8801
Liles & Tippit Inc. (F. E. Myers Equip., Hahn) Collierville 901-853-0246
Tennessee Electric Motor Co. (Cushman/OMC-Lincoln) Nashville 615-255-7331
Tennessee Turf & Toro Co. (Cushman/OMC-Lincoln, F. E. Myers Equip.) Knoxville 615-522-1141
Tieco Tennessee, Inc. (Heckendorn, Olathe, Broyhill, Royer) Nashville 615-242-4483
Turfaid Inc. (Lindig, (Cushman/OMC-Lincoln, Toro) Memphis 901-332-8770
United Equipment (Stanley) Memphis 901-362-3718
Vermeer Equipment of Tennessee, Inc. (Vermeer) Lenoir City 615-966-3298
Vermeer-Memphis, Inc. (Vermeer) Memphis 901-353-4835
The Bill Voorhees Co. (Satoh) Nashville 615-242-4483
Howard Wakefield (Howard Price) Nashville
Wallace Hardware Co., Inc. (Century Farm, Howard Rotavator) Morristown 615-586-5650
Wilson, Weesner & Wilkinson (Stanley) Nashville 615-254-1811
Wilson, Weesner & Wilkinson (Stanley) Johnson City 615-477-3114
Wilson, Weesner & Wilkinson (Stanley) Chatanooga 615-266-6739
Wilson, Weesner & Wilkinson (Stanley) Knoxville 615-525-0404

## Texas

A & G Vermeer Sales (Vermeer) Irving 214-259-1574
A-I Turf (Thompson Mfg. Co.) Houston 713-462-5030
Alamo Machinery Co. (F. E. Myers Equip.) San Antonio 512-226-8219
Austin Products, Inc.(Rhino) Dallas 214-651-0733
Associated Supply Co., Inc. (Cushman/OMC-Lincoln) Amarillo 806-372-8386
Associated Supply Co., Inc. (Cushman/OMC-Lincoln) Lubbock 806-747-2893
B & C Turf Equipment Co. (Hahn) El Paso 915-778-6718
Bell Co., Inc. (Cushman/OMC-Lincoln) El Paso 915-584-5793
Binnion & Assoc., Inc. (Heckendorn) Amarillo 806-352-8181
Boyds Equipment, Inc. (Broyhill) Amarillo
Chemical & Turf Specialty Co. (Royer, F. E. Myers Equip.) Dallas
CISCO (Broyhill) Amarillo
Colonial Motor Co. (Lindig, Olathe) Dallas 214-421-5293
Connally Impl. Supply Co. (Howard Rotavator) Amarillo 806-376-5343
Connally Impl. Supply Co. Inc. (Broyhill) Grand Prairie
Cross B Co. (Thompson Mfg. Co.) San Antonio 512-349-3953
John Deere Co. (Deere Co.) Dallas 214-352-1701
Estes Chemicals Inc. (F. E. Myers Equip.) Wichita Falls 817-766-0163
Goldthwaite's of Texas, inc. (Royer) Houston 713-666-4233
Goldthwaite's of Texas, inc. (Royer) Dallas 214-241-3101
Goldthwaite's of Texas, inc. (Royer) San Antonia 512-653-9660
Goldthwaite's of Texas, inc. (Toro, Royer) Ft. Worth 817-332-1521
Hydrotex Irrigation (Thompson Mfg. Co.) Dallas 214-358-1228
Outdoor Equipment Inc. (Hahn) Houston 713-784-2560
Peerless Equipment Corp. (Stanley) Houston 713-926-1741
Peerless Equipment Corp. (Stanley) Dallas 214-351-3704
Peerless Equipment Corp. (Stanley) Long View 214-758-0727
R & W Supply Co. (Broyhill) Littlefield
Southwest Toro, Inc. (F. E. Myers Equip, Cushman/OMC-Lincoln, Broyhill) EL Paso 915-542-1671
Spyder of Texas (Foxcroft) Needville 713-342-6649
T & C Equipment Co. (Hahn, Broyhill) Hurst 817-268-2406
The Stewart Co. (Satoh) Dallas 214-691-5555
Tri-State Equipment Co. (Kohler Engine) El Paso 915-532-6931
Vermeer Sales & Service (Vermeer) Lubbock 806-762-0609
Vermeer Sales of Texas (Vermeer, Olathe) Houston 713-643-6533
Vermeer Sales of Texas (Vermeer) San Antonia 512-337-7700
Ware Implement Distributors (Century Farm) San Antonia 512-732-5991
Watson Distributing Co., Inc. (Howard Price, Heckendorn, Cushman/OMC-Lincoln) Dallas 214-630-2222
Watson Distributing (Cushman/OMC-Lincoln, Lindig, Richway Products, Heckendorn, Howard Price) Houston 713-771-5771
Watson Distributing (Lindig, Heckendorn, Howard Price, Cushman/OMC-Lincoln) San Antonia 512-654-7065
Waukesha-Pearce Industries, Inc. (Kohler Engine) Houston 713-723-1050

## Utah

Stan Bonham Co. (Broyhill) Salt Lake City
Diesel Electric Service & Supply Co. (Kohler Engine) Salt Lake City 801-972-1836
General Implement Distributors (Rhino, Century Farm) Salt Lake City 801-972-4321
Boyd Martin Co. (Cushman/OMC-Lincoln, Howard Price, Olathe, Lindig, Foxcroft, Broyhill) Salt Lake City 801-521-7202
Steve Regan Co. (F. E. Myers Equip.) Salt Lake City 801-268-4500
Thompson Distributors (Thompson Mfg. Co.) Sandy 801-566-1269
Turf Equipment Co. (Broyhill) Salt Lake City 801-972-4164

Vermeer Intermountain (Vermeer) Salt Lake City 801-521-0230

### Virginia

Baker Equipment Eng. Co. (Stanley) Richmond 804-358-0481
Capital Equipment Co. (Royer) Richmond 804-262-7341
Cavalier Equipment Co. (Olathe) Roanoke 703-345-7441
Hills Irrigation (Thompson Mfg. Co.) Front Royal 703-635-3630
R. P. Johnson & Sons, Inc. (Hahn) Wytheville 703-228-5414
RBI Corporation (Kohler Engine) Richmond 804-359-3531
Richmond Power Equipment Co., Inc. (Cushman/OMC-Lincoln, Toro, Broyhill) Richmond 804-355-7831
Stevenson Ford Tractor, Inc. (Howard Price) Chespeake 804-420-4220
Todd Farm Equipment (Howard Rotavator) Chesapeake 804-543-2071
Universal Tractor Equipment Corp. (Satoh) Richmond 804-353-7806
Vermeer Sales & Service (Vermeer) Glen Allen 804-262-5558
Wolff Brothers (Lindig) Richmond 804-353-9513

### Washington

Ackley Hydraulic Tool Co. (Stanley) Kirkland 206-827-8611
Agrichem, Inc. (Broyhill) Burlington
Audubon Sales, Inc.(Cushman/OMC-Lincoln) Spokane 509-325-2527
Automotive Jobbers Supply Co. (Kohler Engine) Spokane 509-624-2291
Auto Rain Inc. (Thompson Mfg. Co.) Spokane 509-322-6193
Paul Haggard Co. (Olathe) Seattle 206-244-8600
Inland Toro Distributors, Inc. (Cushman/OMC-Lincoln, Lindig, F. E. Myers Equip.) Spokane 509-535-9756
J. M. McConkey & Co., Inc. (Royer) Sumner 206-863-8111
Mid-Mountain Machinery (Vermeer) Spokane 509-535-9756
N. W. Mowers, Inc. (Royer) Seattle 206-542-7478
Northwest Motor Parts & Mfg. Co. (Kohler Engine) Seattle 206-624-4448
Northwest Mowers, Inc. (Howard Price, Richway Products, Olathe) Seattle 206-542-7484
PAPSCO, Inc. (F. E. Myers Equip.) Seattle 206-624-3853
Rayco Distributing (Foxcroft) Spokane 509-483-6404
Sperry New Holland-Pasco (F. E. Myers Equip.) Pasco 509-547-1795
Sunset Northwest (Cushman/OMC-Lincoln) Bellevue 206-455-5640
Theedshort Co. (Mott Corp.) Seattle 206-575-0281
Turf & Toro (Cushman/OMC-Lincoln, Lindig, F. E. Myers Equip., Toro) Kent 206-762-7242

United Supply (Thompson Mfg. Co.) Tacoma 206-272-8445

### West Virginia

Baker Equipment Engr. Co., Inc. (Toro, Royer, F. E. Myers Equip., Cushman/OMC-Lincoln) Charleston 304-344-3441

### Wisconsin

Ametek/Plymouth Products Division (National Diversified Sales, Inc.) Sheboygan
Bob Eisen (Jeep) (Arctic Mizer) Milwaukee
L. F. George Co. (Rhino, Century Farm) Oconomowoc 414-567-6666
HASCO (Master) Ft. Atkinson 414-445-2800
Horst Distributing, Inc. (Cushman/OMC-Lincoln, Royer, Olathe) Chilton 414-849-2341
Kujawa Enterprises, Inc. (Howard Price) Cudahy 414-744-7646
Northern Turf Supply Co. (Hahn, Howard Price) Chippewa Falls 715-834-8707
Pierce Manufacturing Co. (Stanley) Appleton 414-731-5251
Reinders Brothers, Inc. (Cushman/OMC-Lincoln, Lindig, F. E. Myers Equip., Toro) Elm Grove 414-786-3163 414-786-3300
Van's Supply & Equipment, Inc. (Howard Price) Green Bay 414-499-0606
Vermeer Sales & Service (Vermeer) Milwaukee 414-352-2764
Vermeer Sales & Service (Vermeer) West Salem 608-786-1910
Wisconsin Magneto, Inc. (Kohler Engine) Milwaukee 414-445-2800
Wisconsin Turf Equipment Corp. (Cushman/OMC-Lincoln, Royer, Olathe) Janesville 608-752-8766
Wisconsin Turf Equipment Corp. (Royer) New Berlin 414-544-6421

### Wyoming

Vermeer Sales & Service (Vermeer) Cheyenne 307-635-5659
Jirdon Wy Co. (Broyhill) Torrington

## Canada

### Alberta

Bishop Machinery & Supply (Stanley) Edmonton 403-273-2220
Consolidated Western Industry Co. (Heckendorn, Cushman/OMC-Lincoln) Edmonton 403-452-5835
Consolidated Western Industry Co. (Heckendorn, Cushman/OMC-Lincoln) Calgary 403-243-1599
Gem Equipment Sales (Foxcroft) Edmonton
Charles Henry (Royer) Calgary 403-272-1319
Interprovincial Turf Ltd. (Olathe, Howard Price, Royer) Calgary 403-243-5180
Interprovincial Turf Ltd. (Mott Corp, Olathe, Howard Price, Royer) Edmonton 403-436-6560
Oliver Industrial Supply Co. Ltd. (Century Farm) Lethbridge 403-327-1571
Power Electric & Equipment Co. Ltd. (Kohler Engine) Calgary 403-276-7761
Suburban Equipment & Supply (Howard Rotavator) Edmonton 403-426-3713
United Farmers of Alberta (Broyhill) Calgary
Westcan Horticulture, Ltd. (Royer) Calgary 403-266-5688

### British Columbia

Bulter Brothers Dist. (Howard Rotavator) Langley 604-530-0221
Coast Arborist Supplies (Stanley) Langley 604-530-7717
Coast Dieselec Ltd. (Kohler Engine) Vancouver 604-872-5201
Fallis Turf Equipment Ltd. (Cushman/OMC-Lincoln, Olathe, Broyhill, Royer) Richmond 604-273-3931
Friesen Industries Ltd. (Wheel Horse) Abbotsford 604-859-7101
Multi-Turf Specialists Ltd. (Heckendorn) Delta 604-946-7011
Taylor Pearson & Carson (Lindig) Vancouver 604-433-2481
Vermeer Industrial Products, Ltd. (Vermeer) Langley 604-536-6221

### Manitoba

Brandt Machine Ltd. (Royer) Winnipeg 204-786-1258
City Machinery Ltd. (Cushman/OMC-Lincoln) Winnipeg 204-889-4062
Consolidated Turf Equipment (Lindig, Howard Price, Olathe) Winnipeg 204-633-7276
Mumford, Medland, Ltd. (Vermeer) Winnipeg 204-885-4440
Robinson-Alamo Dist. Ltd. (Howard Rotavator) Winnipeg 204-475-2921
Schreyer Equipment, Ltd. (Foxcroft) Winnipeg 204-338-9361
Utility Equipment Service Co. Ltd. (Stanley) Winnipeg 204-452-6539
Yetsmans Ltd. (Kohler Engine) Winnipeg 204-586-8046

### New Brunswich

Atlantic Clarklift Ltd. (Ericson Corp.) St. John 506-657-2720
Maritime Farm Supply Ltd. (Mott Corp.) Moncton 506-382-4443

### Nova Scotia

Atlantic Clarklift Ltd. (Erickson) Halifax 902-453-0170
Halifax Seed Co. (Royer) Halifax 902-454-7456
MacLeod's Lawn Equipment (Cushman/OMC-Lincoln, Lindig) Darmouth 902-469-9361
W. N. White Co. Ltd. (Kohler Engine) Halifax 902-443-5000

### Ontario

Bannerman Ltd. (Hahn) Rexdale 416-247-7875
John Deere Ltd. (Deere Co.) Grimsby 416-945-9281
Duke Lawn Equipment (Broyhill, Cushman/OMC-Lincoln, Heckendorn, Lindig, Mott Corp., Howard Price, Hahn) Burlington 416-637-5216
Fairlawn Equipment Sales (Foxcroft) Lynden 519-647-3481
Foran Ltd. (Century Farm) Wood Stock 519-462-2771
Homelite-Terry-Textron (Wheel Horse) Toronto 416-244-5613
J. H. Ryder Machinery Co. (Erickson Corp.) Toronto 416-259-7841
Spraymotor Ltd. (Royer, Olathe) London 519-681-9660
Spraymotor Ltd. (Olathe) Ottawa
Spraymotor Ltd. (Olathe) Rexdale
Suntester Equipment (Central) Ltd. (Kohler Engine) Toronto 416-251-1165
Turnco (Broyhill) Blenheim
Vermeer of Canada (Vermeer) Mississauga 416-277-3608
Wajax Industries Ltd. (Stanley) Markham 416-495-0629

### Quebec

Agri-Tech, Inc. (Royer) Boucherville 514-655-7230
Forano Ltd., Farm Implement Div. (Century Farm, Howard Rotavator) Plessisville 819-362-7395
Interprovincial Equipment Ltd. (Vermeer) Pointe-Claire 514-695-3320
Morin Equipment Ltee. (Lindig, Cushman/OMC-Lincoln) Longueuil 514-527-3406
Morin Equipment Ltee. (Lindig, Mott Corp., Cushman/OMC-Lincoln) Ste-Foy 418-687-9741
O. J. Company (Hahn, Howard Price) Sherrington 514-861-5379
J. H. Ryder Machinery Co. (Erickson Corp.) Pointe-Claire 514-697-3471
Spraymotor Ltd. (Olathe) Montreal
Wajax Industries Ltd. (Stanley) Chomedey Laval 514-687-2860

### Saskatchewan

Brandt Machine & Mfg. Co. (Royer) Regina 306-525-1314
Brandt Machine & Mfg. Co. (Royer) Saskatoon 306-652-7876
Consoldiated Turf Equipment Ltd. (Olathe) Saskatoon
Mumford, Medland, Ltd. (Vermeer) Regina 306-523-2631
Mumford, Medland, Ltd. (Vermeer) Saskatoon 306-244-1505

### Yukon

Mumford, Medlandd, Ltd. (Vermeer) Whitehorse 403-667-2653

Conaway, Inc.
DESA Industries, Inc.
Echo Chain Saw Div. of America
Homelite, A Div. of
Husqvarna, Inc.
Jobu Chain Saws
Karl Kuemmerling,
Lakes Supply Co.,
Landcaster Pump &
Power E

# 7. Chemical Dealers

### Alabama

Alabama Farmers Coop., (Elanco), Decatur
Altex Nursery Supply, (Sta-Green Corp.), Seemes
Cassco, (Elanco, Maag, Mallinckrodt), Montgomery, 205-272-2140
Chase Nursery Co., Inc., (Elanco), Huntsville
Ibsen Seed Company, Inc., (Elanco), Mobile
Montgomery Seed & Supply, (Sta-Green Corp.), Montgomery
Norala Company, (PBI-Gordon), Birmingham, 205-323-3491
Pennwalt, (Pennwalt), Prattville, 205-365-8897
Thompson Hayward, (Fisons, Thompson Hayward, Velsicol), Birmingham, 205-323-6101
(Thompson Hayward), Huntsville, 205-536-4121
(Thompson Hayward), Mobile, 205-457-5316
(Thompson Hayward), Montgomery, 205-269-4314; 205-264-4543
(Thompson Hayward), Muscle Shoals, 205-381-2420
Tieco, (Elanco, Mallinckrodt, PBI-Gordon), Birmingham, 205-328-6464
(Mallinckrodt, PBI-Gordon), Montgomery, 205-834-3705

### Arizona

Arizona AgriChemicals, (Elanco, PBI-Gordon), Phoenix, 602-244-1311
Capitol Nursery Supply, (Best Prod., Creative Sales, Elanco, PBI-Gordon), Phoenix, 602-272-5508
Copper State Chemical Co., (PBI-Gordon), Tucson, 602-622-3694
General Control, Inc., (Elanco), Tucson
Lawn & Garden Supply, (Mallinckrodt), Phoenix
Target Chemical Co., (Velsicol), Phoenix, 602-272-6867

### Arkansas

Arkansas Nursery & Landscaping, Inc., (Elanco), North Little Rock
Brogdon Spray Supplies, (Velsicol), Springdale, 501-751-4729
Capital Equipment Co., (Mallinckrodt, PBI-Gordon, Velsicol), Alexander, 501-847-3057
(Elanco), Little Rock
Rupert Crafton Commission Co., (Elanco), Blytheville
Paul Hanshaw Chemical Co., Inc., (Elanco), Jonesboro
Southern Farmers Assn., (Elanco), North Little Rock
Thompson Hayward, (Thompson Hayward), Little Rock, 501-565-8446

### California

Abate-A-Weed, (Best Prods., Elanco, PBI-Gordon), Bakersfield, 805-589-0615
Agri-Turf Supplies, (Creative Sales, Elanco, PBI-Gordon, Velsicol), Santa Barbara, 805-963-3691
Albers Feed & Farm Supply, (Best Prods.), Pleasanton, 415-846-3276
Albers, Inc., (Best Prods.), Reno, 702-322-8625
George Ball Pacific, (Elanco, Mallinckrodt), Sunnyvale, 408-738-4700
Butler's Mill, (Best Prods., Creative Sales, Elanco, PBI-Gordon), San Diego, 714-263-6181
Caceres Chemical Company, (Best Prods., Elanco, Mallinckrodt), Los Angeles, 213-876-1460
Calif. Chrysanthemum Growers, (Mallinckrodt), Palo Alto, 415-321-1451
Coastal Ag Chemical, (Best Prods.), Escondido
(Best Prods.), Fillmore, 805-524-2460
(Best Prods.), Goleta, 805-964-3501
(Best Prods.), Lompoc
(Best Prods., Elanco, Mallinckrodt, PBI-Gordon), Oxnard, 805-487-4691
(Best Prods.), San Jacinto, 714-654-4210
Country Farm Supply, (Best Prods., Elanco), Chino, 714-628-3401
Custom Chemilene, (PBI-Gordon), San Leandro, 415-638-4668
Dario Bonfantini, (Best Prods.), Daly City, 415-755-5210
Eagle Chemical, (Best Prods., PBI-Gordon), Santa Clara, 408-988-6866
Eagle Chemical Company, (PBI-Gordon), Anaheim, 714-761-2521
Empire Ag Chemical, (Best Prods.), Empire, 209-527-0450
Encinitas Growers Supplies, (Elanco, Mallinckrodt), Encinitas, 714-753-2532
Enomoto & Company, (Elanco), Redwood City
Foster & Gardner, (Best Prods., Mallinckrodt), Anaheim, 714-761-2521

# Chemical Dealers

*continued*

Foster & Gardner, (Best Prods., Elanco, PBI-Gordon), Coachella, 714-398-6151
Larry Fricker Company, (Elanco, Mallinckrodt), Tustin, 714-544-2600
Interlink Agriculture Chemicals, Inc., (Best Prods., Creative Sales), Modesto, 209-521-2390
Jack's Orchard Supply, (Best Prods.), Chico, 916-343-4552
James Grain Company, (Best Prods.), San Jose, 408-293-5732
L & V Farm Sales, (Best Prods., Elanco), Fremont, 415-792-4031
(PBI-Gordon), Newark, 415-792-4031
Los Angeles Chemical, (Best Prods., Elanco, PBI-Gordon), Southgate, 213-583-4761
J. Harold Mitchell, (Best Prods.), San Gabriel, 213-287-1101
(PBI-Gordon), San Gabriel, 213-283-7721
Monterey Chemical Company, (Elanco), Fresno
Moyer Chemical, (Elanco, Mallinckrodt, Maag, PBI-Gordon), San Jose, 408-297-8088
Moyer Chemical Company, (Maag, PBI-Gordon), Santa Ana, 714-949-2871
Nilsen Company, (Best Prods.), Eureka, 707-442-3741
Northern California Fertilizer, (Best Prods., Elanco, PBI-Gordon), San Jose, 408-292-7957
Nurserymen's Exchange, (Elanco, Mallinckrodt), San Francisco, 415-392-0078
Occidental Chemical Company, (Elanco), Lathrop
Orange County Farm, (Best Prods.), Orange, 714-633-8682
Orchard Supply, (Best Prods., Elanco, PBI-Gordon), Sacramento, 916-446-7821
Oxychem Brentwood, (Best Prods.), Brentwood, 415-634-1155
Oxychem Hughson, (Best Prods.), Hughson, 209-883-4447
Oxychem Live Oak, (Best Prods.), Live Oak, 916-695-2181
Oxychem Stockton, (Best Prods.), Stockton, 209-464-8328
Pennwalt, (Pennwalt), Fresno, 209-435-2500
Plant Gro Corporation, (Elanco, Mallinckrodt, Velsicol), San Jose, 408-292-4332
Preston Weed Control Co., (Elanco), Whittier
PureGro Company, (Elanco), Los Angeles
(Elanco), Stockton
Purity Chemical Company, (Best Prods., PBI-Gordon), Santa Rosa, 707-546-2585
Ramsey Seed Company, (PBI-Gordon), Manteca, 209-833-1721
Reno Ranch & Sprinkler Supply Co., (Best Prods.), Reno, 702-826-5022
Ripon Farm Service, (Best Prods.), Ripon, 209-599-2188
Robinson Fertilizer Company, (Best Prods., Creative Sales, Elanco, Mallinckrodt, PBI-Gordon), Orange, 714-538-3575
San Joaquin Sulfur Company, (Best Prods.), Lodi, 209-368-6676
Sanders Plant Foods, (Best Prods.), Santa Maria, 805-937-7191
Seeley's Nursery, (Best Prods.), Fresno, 209-442-8118
Sierra Moreno Merc. Co., (Creative Sales), Mountain View, 415-967-4676
F. F. Smith Company, (Best Prods.), Sacramento, 916-371-7830
Target Chemical Co., (Best Prods., Elanco, Fisons, Mallinckrodt, PBI-Gordon, Velsicol), Carritos, 213-865-9541
(Elanco, Best Prods., PBI-Gordon, Velsicol), San Jose, 408-293-6032
John Taylor Fertilizer, (Best Prods.), Sacramento, 916-443-6591
Thompson Hayward, (Thompson Hayward), Brea, 714-529-3973; 213-694-2048
(Thompson Hayward), Fresno, 209-251-7144
(Thompson Hayward), Yakima, 509-453-5575
Van Waters & Rogers, (Fisons), San Mateo, 415-573-8000
Viola Seed Company, (Mallinckrodt), San Francisco, 415-585-8234
Wilbur-Ellis Company, (Mallinckrodt, PBI-Gordon), Chula Vista, 714-422-5321
(Elanco, Mallinckrodt), Los Angeles, 213-685-8579
Winton Ag Chemical, (Best Prods.), Wincon, 209-358-7189
Yamada Company, (Best Prods.), Gardena, 213-324-1337

## Colorado

American Fertilizer & Chem. Co., (Elanco), Henderson
Balcom Chemicals Inc., (Fisons), Greeley, 303-356-4400
Boyd Distributing Co., (Mallinckrodt), Denver
Denver Wholesale Florists, (Elanco, Mallinckrodt), Denver, 303-399-0970
Gorby, Inc., (PBI-Gordon), Colorado Springs, 303-598-1539
Great Western Sugar Company, (Fisons), Denver, 303-893-4600
L. L. Johnson Distributing Co., (Mallinckrodt), Denver
Pueblo Chemical & Supply, (PBI-Gordon), Pueblo
Randall Industries, (Creative Sales), Grand Junction, 303-242-3787
S.A.J. Turf Products, (PBI-Gordon), Westminister, 303-426-4164
Swingle, Inc., (Creative Sales), Denver, 303-399-2301
Thompson Hayward, (Thompson Hayward), Denver, 303-321-3802
(Thompson Hayward), Grand Junction, 303-245-0408
United Fruit Growers Assn., (Creative Sales), Palisade, 303-464-5671
Van Waters & Rogers, (Mallinckrodt, PBI-Gordon, Velsicol), Denver, 303-388-5651

## Connecticut

Cadwell & Jones, Inc., (Elanco, Velsicol), East Hartford, 203-289-9555
C. B. Dolge Company, (PBI-Gordon), Westport, 203-227-9591
Magovern Company, (Mallinckrodt), Fairfield
(Mallinckrodt), Wincsor Locks
Muench Co., Inc., (Creative Sales), Stamford, 203-323-9712
Old Fox Chemical Co., (PBI-Gordon, Velsicol), Hazardville, 203-749-8339
Emanuel Shemin Horticulturist, (Elanco, PBI-Gordon), Greenwich, 203-531-7352
Somers Turf Supplies, (PBI-Gordon), Devon, 203-878-2108
Thompson Hayward, (Thompson Hayward), Cheshire, 203-272-4866
Turf Products Corporation, (Elanco, PBI-Gordon), So. Windsor, 203-289-3471

## Florida

Apopka Growers Supply, (Elanco, Mallinckrodt, Velsicol), Apopka, 305-886-5555
Asgrow Florida Company, (Mallinckrodt), Plant City, 813-752-1177
Atlantic Fertilizer and Chemical Co., (Mallinckrodt), Apopka, 305-889-2111
(Elanco, Mallinckrodt, PBI-Gordon, Velsicol), Homestead, 305-247-8800
Bingham Seed Company, (Elanco, PBI-Gordon, Velsicol), Jacksonville, 904-768-1503
Chase & Company, (Elanco, PBI-Gordon, Velsicol), Sanford, 305-322-4552
Gulf Shore Turf Supply, Inc., (Mallinckrodt, PBI-Gordon, Velsicol), Pensacola, 904-968-2183
Hector Agr. Export, Inc., (Mallinckrodt), Miami, 305-621-7581
So. Agr. Insecticides, (Mallinckrodt), Palmetto, 813-722-3285
Southern Chemicals, Inc., (Elanco), Sanford
Southern Mill Creek Prod., (Mallinckrodt), Miami
(Elanco, Fisons, Mallinckrodt, Velsicol) Tampa, 813-626-2111
Stephenson Chemical Co., (Velsicol), Jacksonville, 904-355-4901
Superior Fertilizer & Chem. Co., (Elanco), Tampa
Swift Chemical Company, (PBI-Gordon, Velsicol), Winter Haven, 813-293-3147
Thompson Hayward, (Thompson Hayward), Sanford, 305-322-5716
Tieco Gulf Coast, Inc., (Elanco, Mallinckrodt, PBI-Gordon), Pensacola, 904-434-5475
Universal Enterprises, (Elanco, Mallinckrodt), Pompano Beach, 305-941-0600
USS Agri-Chemicals, (Elanco), Davenport
Woodbury Chemical Company, (Elanco, Fisons, Velsicol), Princeton, 305-247-0524
(Fisons), Mt. Dora, 904-383-4181

## Georgia

Chemscape, Div. of Chemlawn, (Creative Sales), Norcross, 404-448-2963 800-241-6520
Dettelbach Pesticide Corporation, (Fisons), Atlanta, 404-237-1862 (0077)
Georgia Golf & Garden Supply Co., (Elanco, Mallinckrodt, PBI-Gordon), Doraville, 404-448-1410
Gold Kist, Inc., (Elanco), Atlanta
Graco Fertilizer Co., (Elanco), Cairo
Grund Industries, Inc., (Elanco), Zebulon
Lawn & Turf, Inc., (Elanco, Mallinckrodt, PBI-Gordon), Conyers, 404-483-4743
Regal Chemical Company, (Elanco, Mallinckrodt, PBI-Gordon, Velsicol), Dunwoody, 404-394-0475
Southern Mill Creeks Products, (Velsicol), Atlanta, 404-355-6583
Stephenson Chemical Co., (Elanco, Fisons, PBI-Gordon, Velsicol), College Park, 414-762-0194
Thompson Hayward, (Thompson Hayward), Albany, 912-436-5787 (Thompson Hayward), Americus, 912-924-6191 (Thompson Hayward), Atlanta, 404-351-0654 404-394-7538 (Velsicol), Atlanta, 404-355-6583 (Thompson Hayward), Camilla, 912-336-5638 (Thompson Hayward), St. Gabriel, 504-642-8391
Toro Distrib.-Atlanta, (Mallinckrodt), Atlanta
USS Agri-Chemicals, (Elanco), Albany (Elanco), Atlanta
Woolfolk Chemical Works, Inc., (Elanco, PBI-Gordon), Fort Valley, 912-825-5511

## Hawaii

Brewer Chemical, (Elanco, Mallinckrodt), Honolulu, 808-533-4411
C. T. Enterprises, Inc., (Velsicol), Honolulu, 808-841-5956
Frietas Enterprises, (Creative Sales), Makawao, 808-877-5979
Occidental Chemical Co., (PBI-Gordon), Hilo (Elanco), Honolulu (PBI-Gordon), Kahului (PBI-Gordon), Lihue
Occidental Chemicals Hawaii, Inc., (PBI-Gordon), Honolulu

## Idaho

Steve Regan Company, (Best Prod., Elanco, PBI-Gordon), Boise, 208-375-1042
Western Farm Services, (Fisons), Jerome, 202-734-3838
Wilbur-Ellis Company, (Fisons), Caldwell, 208-459-1631

## Illinois

George J. Ball, Inc., (Elanco, Mallinckrodt), West Chicago, 312-231-3500
Behm & Hagemann, Inc., (Creative Sales, Elanco), Peoria, 309-674-5153
Chicago Toro-Turf-Irrigation Co., (Elanco, Mallinckrodt), Itasca
Arthur Clesen, Inc., (Elanco, PBI-Gordon), Wheeling, 312-537-2177
George A. Davis, Inc., (Elanco, Mallinckrodt, PBI-Gordon, Velsicol), Chicago, 312-763-6363
Drake-Scruggs Equipment, Inc., (PBI-Gordon), Springfield, 217-753-3871
Fister/Warren, (Creative Sales), Des Plaines, 312-296-4450
Florist Products, Inc., (Elanco, Mallinckrodt), Des Plaines, 312-437-5103
C. D. Ford & Sons, (PBI-Gordon), Geneseo, 309-944-4661
Illinois Lawn Equipment (Mallinckrodt), Orland Park
Geo. Keller & Sons Co., (Creative Sales), Quincy, 217-222-3161
Lake Cook Farm Supply Co., (Creative Sales, Elanco), Des Plaines, 312-824-6665
W. B. McCloud & Company, (Elanco), Schaumburg
Olsen Distributing Co., (Creative Sales, PBI-Gordon), Barrington, 312-381-9333
Paarlberg Chemicals, (Elanco), South Holland
Permalawn, Inc., (Creative Sales), Evanston, 312-864-5045
Planter's Aide, Inc., (Creative Sales), Melrose Park, 312-345-4390
Professional Turf Specialty, (Elanco, Mallinckrodt, PBI-Gordon), Bloomington, 309-829-5031
Scruggs-Drake Equipment, Inc., (PBI-Gordon), Decatur
Leon Short & Sons, Inc., (Elanco, Mallinckrodt, PBI-Gordon, Velsicol), E. Peoria, 309-694-1493
Siemer Milling Co., (Creative Sales), Teutopolis, 217-857-3131
Thompson Hayward, (Thompson Hayward), Chicago, 312-847-2000 (Thompson Hayward), Park Ridge, 312-299-2074 (Thompson Hayward), Rockford, 815-965-0909
Toro Distributing, (Velsicol), Itasca, 312-773-2110
Turf Management Supply, (Creative Sales, PBI-Gordon), Rockton, 815-624-7578
USS Agri-Chemicals, (Elanco) Chicago Heights (Elanco) East St. Louis
V-G Supply Company (Elanco, PBI-Gordon, Velsicol), Morton Grove, 312-965-3400
Vaughan's Seed Company, (Elanco, Mallinckrodt, Velsicol), Downers Grove, 312-969-6300
Weeds, Inc., (Elanco), Palos Heights

## Indiana

Cory Orchard Supply Company, (Creative Sales, Elanco, PBI-Gordon), Indianapolis, 317-634-7963
Desco Chemical, (Creative Sales, Mallinckrodt), Indianapolis, 317-293-8183 (Elanco, Creative Sales, PBI-Gordon), Nappanee, 219-773-7781
Indiana Seed Company, (Elanco), Noblesville
Kenney Machinery Corp., (Elanco, Mallinckrodt, Velsicol), Indianapolis, 317-293-4793
Kova Fertilizer, (Elanco), Greensburg
M.G.R. Feed Co., Inc., (Creative Sales), Hammond, 219-932-4588
Riley Lawn & Golf Equipment, (Elanco, Mallinckrodt, Velsicol), Indianapolis, 317-291-2280 (Velsicol), Fort Wayne, 219-484-9605
Seedkem, Inc., (Creative Sales, Elanco, Mallinckrodt, PBI-Gordon), Evansville, 812-424-2401
Thompson Hayward, (Thompson Hayward), Indianapolis, 317-357-8436
Turf Specialties, (Mallinckrodt), Fort Wayne
USS Agri-Chemicals, (Elanco, Velsicol), Jeffersonville, 812-282-0471

## Iowa

Aidex Corporation, (Elanco), Council Bluffs
W. R. Anderson Distributing Co., (PBI-Gordon), Sioux City, 712-252-1604
Baer Ag Supply, (PBI-Gordon), Waukee, 515-987-4763
Big Bear Turf Co., (PBI-Gordon), W. Des Moines, 515-225-1271
Big Bear Turf Inc., (Velsicol), Des Moines, 515-243-1271
Brayton Chemical Inc., (Elanco, PBI-Gordon), 319-752-6324
Foster's Inc., (Creative Sales, Elanco, PBI-Gordon), Waterloo, 319-235-6548
Hawkeye Seed Company, Inc., (PBI-Gordon), Cedar Rapids
Leisure-Aid, (PBI-Gordon), Council Bluffs, 712-366-2441
Little Wheels Ltd., (Elanco, Mallinckrodt, PBI-Gordon, Velsicol), Iowa City, 319-354-1357
Mann Chemical & Orchard Supply Co., (Elanco), Woodbine
May Seed & Nursery Co., (Creative Sales), Shenandoah, 712-246-1020
Meyer Equipment Co., (PBI-Gordon), Elkader
Mount Arbor Nurseries, (Elanco), Shenandoah
Rest Haven Turf Service, (Elanco, PBI-Gordon), W. Des Moines, 515-279-8861
Thompson Hayward, (Thompson Hayward), Davenport, 319-322-3511 (Thompson Hayward), Des Moines, 515-266-1191
Tri-State Toro, (PBI-Gordon), Davenport, 319-326-4416
Trusty Supplies, (Creative Sales), Council Bluffs, 712-322-2539

## Kansas

Bartels & Shores, (PBI-Gordon), Wichita, 316-262-5141
Champion Turf Equipment, Inc., (PBI-Gordon), Wichita, 316-943-0283
Chem-Trol, Inc., (Elanco), Kansas City
Landsco Corp., (PBI-Gordon, Velsicol), Salina, 913-825-0578
Rhodes Chemical Co., (Creative Sales, Fisons, PBI-Gordon, Velsicol), Kansas City, 913-432-2424
Swecker-Knipp, (Creative Sales, PBI-Gordon), Topeka, 913-234-5652
The Industrial Fumigant Co., (Fisons), Olathe, 913-782-7600
Thompson Hayward, (Thompson Hayward), Kansas City 913-321-3131 (Thompson Hayward), Wichita, 316-263-1244
Robert Wise Company, (Creative Sales, PBI-Gordon), Wichita, 316-838-1474

## Kentucky

Bunton Seed Company, Inc., (Elanco, PBI-Gordon), Louisville, 502-584-0136

# Chemical Dealers

Calvert Tree & Landscaping, Inc., (Creative Sales), PeWee Valley, 502-425-0838
Jack Dayton & Son, (Mallinckrodt), Louisville
George W. Hill & Co., Inc., (Creative Sales, Elanco, Mallinckrodt, PBI-Gordon, Velsicol), Florence, 606-371-8423
Ky-Inna Turf Supply Company, Inc., (Elanco, Mallinckrodt, PBI-Gordon), Louisville, 502-491-8400
Premium Seed Company, (Mallinckrodt), Louisville, 502-582-3897

## Louisiana

Johnnie Bayles Supply Co., Inc., (StaGreen), West Monroe
Burlap Sales Company, (Elanco), New Orleans
Chem-Ag, Inc., (Elanco), Lafayette
Savvy Chemical Company, (Velsicol), Metairie, 504-835-5926
Southern Specialty Sales Co., Inc., (Elanco, Mallinckrodt, PBI-Gordon), New Orleans, 504-486-6101
Tammany Turf & Supply, Inc., (PBI-Gordon), Covington, 504-892-5011
Thompson Hayward, (Thompson Hayward), New Orleans, 504-866-3601 (Thompson Hayward), Shreveport, 318-424-7723
USS Agri-Chemicals, (Velsicol), Covington, 504-892-2955
Al Wyche Distributor (Elanco), Plain Dealing
Wyche Golf Course and Specialty Co., (PBI-Gordon, Velsicol), Baton Rouge, 504-925-2986 (PBI-Gordon, Velsicol), Plain Dealing, 318-226-4484

## Maine

Yerxas, Inc., (Elanco, PBI-Gordon), South Portland, 207-799-2241

## Maryland

Adams Equipment, Inc., (Mallinckrodt), Baltimore (Mallinckrodt) Silver Spring
Ag-Chem, Inc., (Elanco), Girdletree
Agrotec, Inc., (Mallinckrodt), Salisbury, 301-749-8496
Cornell Chemical & Equipment Co., Inc., (Elanco, Mallinckrodt, PBI-Gordon, Velsicol), Baltimore, 301-247-1525
G. L. Cornell Company, (Elanco, Mallinckrodt), Gaithersburg
Meyer Seed Company, (Elanco), Baltimore
Summit Chemical Company, (Elanco), Baltimore
Vaughan-Jacklin Corporation, (Elanco, PBI-Gordon), Landover

## Massachusetts

Jas. P. Brown Company, (Mallinckrodt, Velsicol), Worcester, 617-757-7462
Bruckman, Inc., (Elanco), Lawrence
The Clapper Company, (Elanco, Mallinckrodt, PBI-Gordon, Velsicol), West Newton, 617-244-7900
Tom Duffy, (Creative Sales), Norwood, 617-769-4300
Farm Bureau Association, (Elanco, Mallinckrodt, PBI-Gordon), Waltham
Griffin Greenhouse Supplies, Inc., (Elanco, Mallinckrodt), Tewksbury, 617-944-0519
Grounds Equipment Company, (PBI-Gordon), Newton Center, 617-244-7541
Tom Irwin Company, (Elanco, Mallinckrodt, Velsicol), Burlington, 617-273-0143
Magovern Company, (Mallinckrodt), Pittsfield
R. F. Morse and Son, Inc., (Elanco, PBI-Gordon), West Wareham, 617-295-1553
Railroad Weed Control, Inc., (Elanco), Westfield
Richey & Clapper, Inc., (PBI-Gordon), Natick, 617-235-6568

## Michigan

Agrico Chemical Company, (Fisons), Saginaw, (517) 323-2125
American Horticultural Supply, (Mallinckrodt), West Bloomfield, (313) 626-2623
Billings Feed Store (Elanco) Royal Oak
Burdick Seed Company (PBI/Gordon) Saginaw (517) 753-3406
J. J. Dill Company (Elanco, Mallinckrodt, PBI/Gordon, Velsicol) Kalamazoo, (616) 349-7755
Fergusons Lawn Equipment (PBI/Gordon, Mallinckrodt), Traverse City, (616) 946-2440
Grower Service Corporation (Fisons), Saginaw, (517) 323-2125
Haviland AgriChemical Company (Elanco), Grand Rapids
L & E Chemical Company (Elanco), Royal Oak
Lawn Equipment Company (PBI/Gordon, Mallinckrodt), Royal Oak (313) 398-3636
W. F. Miller Company (elanco, PBI/Gordon) Birmingham, (313) 647-7700
J. Mollema & Son, (Creative Sales, Elanco, Mallinckrodt, PBI/Gordon), Grand Rapids, (616) 245-0533
Parmender & Andre (PBI/Gordon, Velsicol), Grand Rapids, (616) 458-1546
Smith-Douglas (Elanco), Holland
Terminal Sales Corporation, (Elanco, PBI/Gordon, Velsicol), Detroit, (313) 491-0606
Turf Supplies, Inc., (Creative Sales, Elanco, PBI/Gordon), Taylor, (313) 291-1200

## Minnesota

Agricultural Services, Inc. (Elanco), Minneapolis
The Castle Chemical Co., Inc. (PBI/Gordon), Minnestoa, (612) 890-1083
R. L. Gould, Inc. (Elanco, Mallinckrodt, PBI/Gordon, Velsicol), St. Paul (612) 484-8411
Habco, Inc., (Elanco) Hopkins
Johnson Floral Supply, Inc. (Elanco), St. Paul
Johnson Wholesale Florists (Mallinckrodt), Minneapolis (612) 781-2686
Minnestoa Toro, Inc., (Mallinckrodt, PBI/Gordon), Minneapolis, (612) 475-2200
Northrup King & Company, (Elanco, Mallinckrodt), Minneapolis (612) 781-8011
Rosen Livestock-Ag. Chem. Div., (Elanco), Fairmont
Tessman Seed & Chemical (Elanco), Eagan
Thompson Hayward (Thompson Hayward), Minneapolis, (612) 332-5394

## Mississippi

Beach Cycle & Supply Co., (Velsicol), Gulfport (601) 863-2377
Delta Purchasing Federation (Elanco), Greenwood
MFC Services (AAL), (Elanco), Jackson
Southern Seed Company, Inc. (Elanco, PBI/Gordon), Jackson, (601) 372-8132
Thompson Hayward (Thompson Hayward), Greenville, (601) 335-3395; Jackson, (601) 969-3177
The Was Company (Elanco), Amory

## Missouri

Bartels & Shores Chemical Company, (Elanco, PBI/Gordon, Velsicol), Kansas City, (816) 471-0727
Beckman Bros., Inc., (Elanco), Olivette
Beckman Turf & Irrigation Supply Company, Inc., (Elanco, PBI/Gordon, Velsicol), Chesterfield, (314) 532-3649
Champion Turf Equipment, Inc., (PBI/Gordon, Mallinckrodt), Kansas City, (816) 333-8000;(PBI/Gordon), Springfield, (417) 681-2551
Crown Chemical Company, (Creative Sales, Elanco, PBI/Gordon, Mallinckrodt, Fisons, Velsicol), St. Louis, (314) 533-0999
J. C. Ehrlich Company, (Elanco), St. Charles
A. H. Hummert Seed Company, (Elanco, Mallinckrodt), St. Louis, (314) 771-0646
Kitten & Bear Chemical Company, (Elanco, Fisons, PBI/Gordon), St. Louis, (314) 865-2000
Landsco, (PBI/Gordon, Velsicol), Grandview, (816) 765-4777
Link's Nursery, Inc., (Elanco, Mallinckrodt, Velsicol), St. Louis, (314) 432-8592
Outdoor Equipment Company, (PBI/Gordon, Mallinckrodt), St. Louis, (314) 966-3911
Patterson Chemical Company, Inc., (Creative Sales), Kansas City, (816) 842-8211
Pest Control Supplies, (PBI/Gordon, Fisons), Kansas City, (816) 421-4696
Robison's Lawn & Golf, Inc., (Elanco, PBI/Gordon, Mallinckrodt), Grandview, (816) 765-3333
Standard Seed Company, (PBI/Gordon), Kansas City, (816) 842-3838
Stuppy Greenhouse Supply Company, (Elanco, Mallinckrodt), North Kansas, (816) 842-3071
Thompson Hayward, (Thompson Hayward), St. Louis, (314) 389-4740
Veatch Chemical Company, Inc., (Fisons), St. Louis, (314) 832-0056

## Montana

Midland Implement Company, (Mallinckrodt), Billings
Mr. Turf, (PBI/Gordon), Helena
Turf Aid Distributing Company (PBI/Gordon), Billings, (406) 656-8008

## Nebraska

Big Bear Equipment, Inc. (PBI/Gordon, Velsicol), Omaha, (402) 331-0200
Central Chemical (creative Sales), Kearney, (308) 234-1326
Cornbelt Chemical Company (Elanco, PBI/Gordon), McCook, (308) 345-5057
John Housley Nursery Sales (Creative Sales), Elkhorn, (402) 289-2626
Jirdon Agri-Chem, Inc., (Creative Sales, Elanco, PBI/Gordon), Morrill, (308) 436-2166
Leisur-Aid (Creative Sale, PBI/Gordon), Omaha, (712) 366-2441
Midwest Toro (Elanco, PBI/Gordon, Mallinckrodt), Omaha, (402) 331-0500
Pioneer Chemical Company, (Creative Sales), North Platte, (308) 532-5867
Simplot Soil Builders (Elanco), Waterloo
South of Sugar Factory (Fisons), Scottsbluff, (308) 632-4155
Thompson Hayward (Thompson Hayward), Omaha, (402) 331-4525
Tri Valley Corporation (Elanco, PBI/Gordon), Omaha, (402) 334-7211
The Yard Company, (PBI/Gordon), Omaha, (402) 333-7576

## Nevada

Clark County Wholesale Mercantile Co., (Best Products, Elanco, PBI/Gordon), Las Vegas, (702) 382-7700
Las Vegas Fertilizer Company, Inc. (PBI/Gordon), No. Las Vegas, (702) 649-1551

## New Hampshire

Turf Specialties, (Mallinckrodt), Greenland
Turf Specialty, Inc., (PBI/Gordon), Hooksett, (603) 485-7866

## New Jersey

Blanken Industrial Weed Company, (Elanco), Maplewood
Chamberlin & Barclay, (Elanco), Cranbury
Fertl-Soil Company, (Elanco, PBI/Gordon, Mallinckrodt, Velsicol), Rahway, (201) 843-6655
D. Gangeri & Son, Inc. (Elanco), Englewood
Green Hill Turf Supply, Inc., (Elanco, PBI/Gordon, Velsicol), Freehold, (201) 462-2349
Good-Prod. Sales, Inc., (Creative Sales, Elanco), Kenilworth, (201) 245-5055
JEP Sales, Inc., (Elanco, PBI/Gordon), Yardville, (609) 585-2300
Johnson Products, Inc., (Elanco), Linden
Lawn King Morris/Passaic Counties, (Elanco), Pine Brook
Levitt's Plant Food Supply, (Elanco), Pine Brook
Lofts Pedigreed Seed Company, Inc., (Elanco, PBI/Gordon), Bound Brook, (201) 356-8700
McLaughlin, Inc., (Elanco), Medford
Meskers, Inc., (Elanco, Mallinckrodt), River Vale, (201) 573-1212
Orange Garden Supply Company, (Elanco), Orange
Pierson's Mill Company, (Elanco, PBI/Gordon, Mallinckrodt, Velsicol), Maplewood, (201) 763-6633
Raycroft Distributors, (Elanco), Shrewsbury
Reed & Perrine, (Elanco), Tennent
Residex Corporation, (Elanco, Fisons), Clark, (201) 381-6200
Rockland Chemical Company, (Elanco, PBI/Gordon, Velsicol), West Caldwell, (201) 575-1322
Simmons & Mount, (Elanco), Cranbury
Storr Tractor Company, (Elanco), Westfield, (201) 232-7800
The Terre Company, (Elanco, PBI/Gordon, Velsicol), Saddlebrook, (201) 843-6655
Turf Products Corporation, (Elanco, Mallinckrodt, Velsicol), Pine Brook, (201) 227-1581
Vaughn-Jacklin Corporation, (Elanco, PBI/Gordon, Mallinckrodt), Bound Brook, (201) 356-4200
Andrew Wilson, Inc., (Elanco, Mallinckrodt, PBI/Gordon), Mountainside, (201) 654-5800

## New Mexico

Agricultural Products Company (Elanco), Mesquite
Albuquerque Chemical Company, Inc., (PBI/Gordon, Mallinckrodt), Albuquerque, (505) 247-2321
Custom Weed Control, Inc., (Elanco), Hobbs
Layman's Landscaping (Creative Sales), Albuquerque
Roswell Seed Company, Inc., (PBI/Gordon), Roswell, (505) 622-7701

## New York

Abalene Spray Service, Inc., (Elanco), Poughkeepsie
J. L. Adikes, Inc., (Elanco, (PBI/Gordon, Velsicol), Jamaica, (212) 739-4400
Agway, Inc., (Elanco, PBI/Gordon), Syracuse, (315) 477-6332; (Mallinckrodt), Milton; (Mallinckrodt), Sodus
American Fluoride Corporation, (Fisons), New Rochelle, (914) 633-7005
American Horticultural Supply, (Mallinckrodt), New York (212) 874-0200
Berkeley Chemical Corporation, (3-M), Lynbrook, (516) 599-6900
Chemical Sales Corporation, (Velsicol), Buffalo, (716) 885-5100
Eaton Equipment Corporation, (Elanco, Mallinckrodt, PBI/Gordon), Hamburg, (716) 649-2020
Fleco Chemical Products Co., Inc., (Elanco, Velsicol), Geneva, (315) 789-8110
Fred C. Gloeckner, (Elanco, Mallinckrodt), New York, (212) 679-6460
Grassland Equipment & Irrigation Corporation, (Elanco, Mallinckrodt), Latham,
Haverstick Golf & Tractor, (Mallinckrodt), Syracuse
Herbst Brothers Seedsmen, Inc., (Elanco), Brewster
Island Golf & Turf, Inc., (Elanco, Mallinckrodt, PBI/Gordon, Velsicol), Dix Hills, (516) 667-2110
Lawn Medic, (Pbi/Gordon), Bergen
James H. Lynch, Inc., (Elanco, PBI/Gordon), South Hampton, (LI) (516) 383-0820
Maxwell Turf, Inc., (Elanco, PBI/Gordon, Velsicol), Hauppage, (516) 265-3580
Metro Milorganite, (pbi/Gordon), Hawthorne, (914) 769-7600
S. V. Moffett Company, (Elanco, PBI/Gordon, Mallinckrodt), W. Henrietta, (716) 334-0100
Monroe Tree & Landscape, Inc., (Creative Sales), Rochester, (716) 436-2900
Al Saffer & Company, Inc., (Elanco, Mallinckrodt), New York, (212) 675-2248
Seagrott Floral Company, (Elanco), Albany
Slater Supply Company, (Mallinckrodt), Farmingdale, (516) 249-7080
Sterling Bag & Supply Company, (Creative Sales), Lackawanna, (716) 826-1991
R. P. Squires Company, (Mallinckrodt), E. Norwich
Turf Specialists Corporation, (Elanco), Holbrook
Wagner Seed Company (Halco Chemical Division), (Elanco, PBI/Gordon, Mallinckrodt, Velsicol), Farmingdale, (516) 293-6312
Wayne Floral Company, Inc., (Mallinckrodt), Newark
Westchester Turf Supply Company, (PBI/Gordon, Mallinckrodt), Lincolndale, (914) 937-6523
E. H. Worthington Company, (Mallinckrodt), Saranac Lake
York Chemical Corporation, (Fisons), Long Island, (516) 741-4301

## North Carolina

Brawley Seed Company, (Mallinckrodt), Mooresville, (704) 333-0196
Byrum Seed Company, (Sta-Green), Charlotte
FCX, Inc., (Elanco), Raleigh
Forshaw Chemicals, Inc., (Elanco, Fisons, Velsicol), Charlotte, (704) 372-6790
Goltra, Inc., (PBI/Gordon, Mallinckrodt, Velsicol), Winston-Salem, (919) 724-7419
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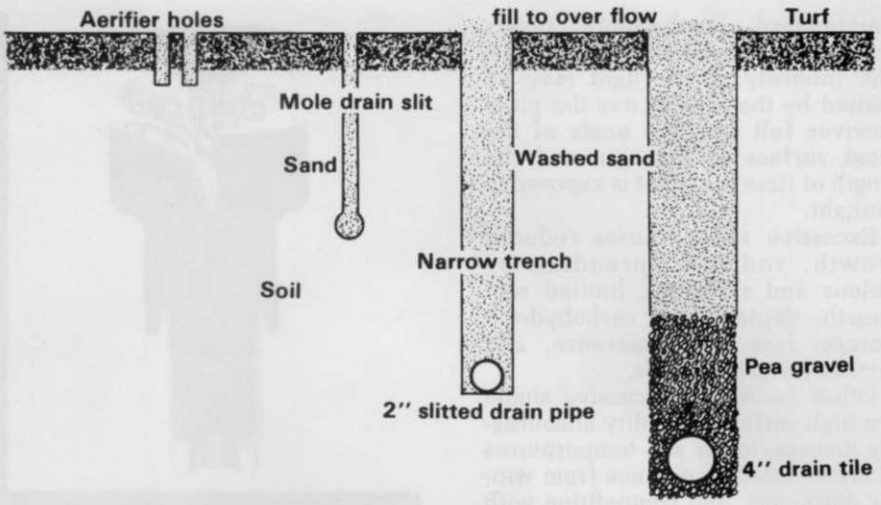
## Drainage

Waterlogged or submersed turfgrass can be severely damaged in less than two weeks, longer during dormancy. Standing water should be eliminated by filling in low spots, grading to control surface runoff, or installation of drainage tile. If drain tile is the choice, they should be installed in a branched pattern 15 to 30 feet apart with a minimum slope of .5 to 1 percent, at a depth of two to three feet, shallower in sandy soils. The best backfill is washed sand to the surface. If the subgrade is relatively impervious to water, but lower layers are fine, drilling or shallow slit trenches may solve the problem.

If major modification of the rootzone is planned, subgrades can be sloped toward spaced tile or perforated plastic pipe for even distribution of drainage. Rootzone designs usually call for coarse sand over the tile with a layer of topsoil on top mixed to specified texture.

Drainage may also be impaired by thatch, hydrophobic soils, and hard water. Thatch removal, soil aerification, and water conditioners can improve infiltration. Depth of topsoil affects drainage since shallow layers of topsoil will tend to saturate faster than deeper layers.

For proper surface drainage slopes should be more than one percent but no more than 20 percent.

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## Shade

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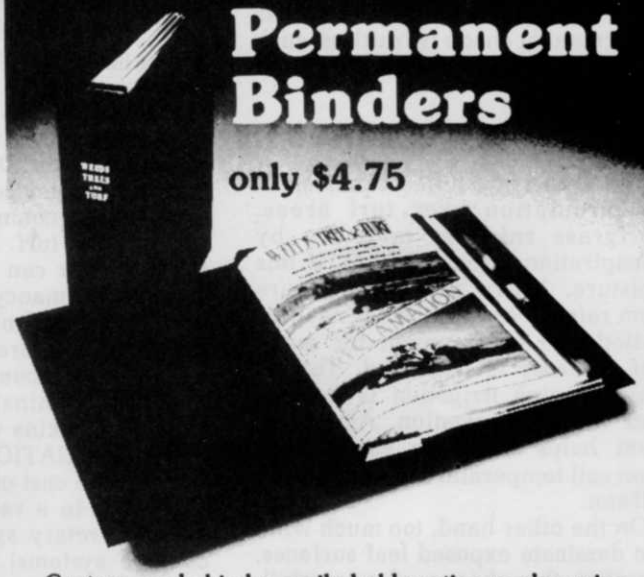

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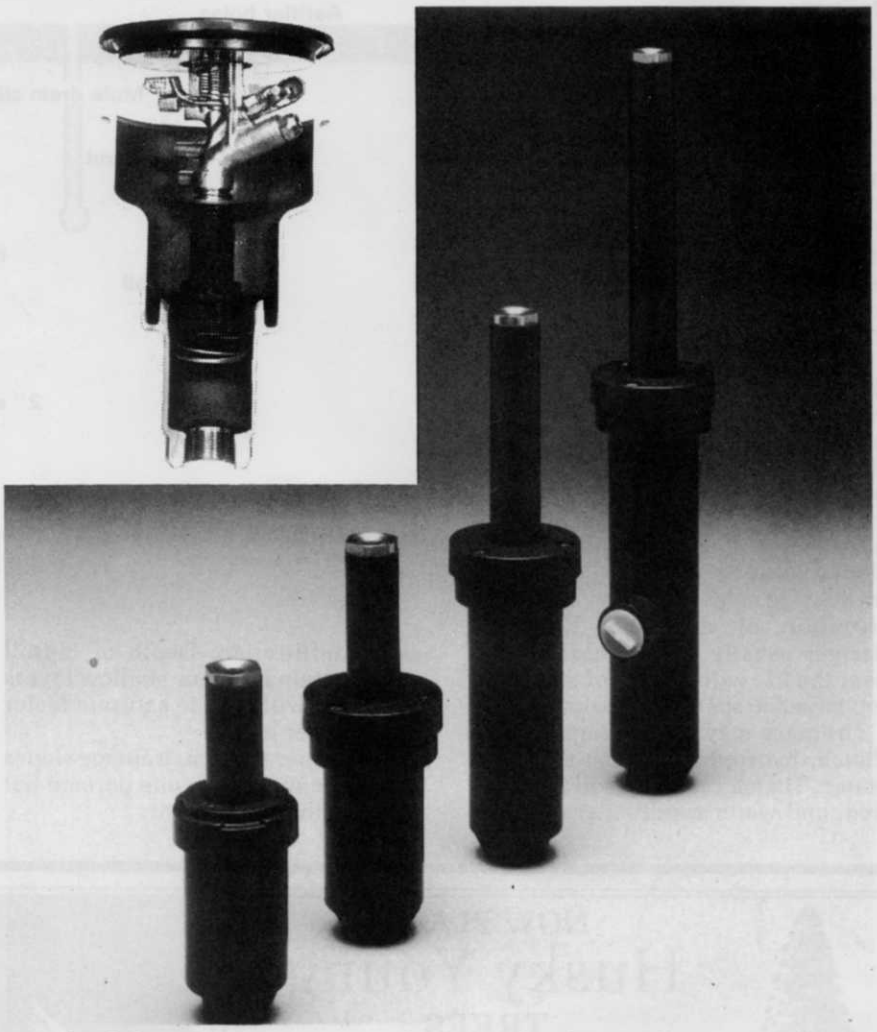
maintenance. Furthermore, plants prefer blue regions of light to others. The intensity of the light may be limited by the time of day the plant receives full sun, the angle of the plant surface to the sun, and the length of time the plant is exposed to sunlight.

Excessive shade causes reduced growth, reduced spreading by stolons and rhizomes, limited root growth, depletion of carbohydrate storage, less wear tolerance, and thinner turfgrass stands.

Other factors of excessive shade are high surface humidity encouraging disease, lower soil temperatures likely to delay emergence from winter dormancy, and competition with trees for nutrients. Creeping red fescue and velvet bentgrass are most shade tolerant of cool season turfgrasses. *Poa trivialis*, creeping bentgrass, and tall fescue have fair shade tolerance. Kentucky bluegrasses are notably shade intolerant, however, some cultivars exhibit improved shade tolerance such as Glade and Warren's A-34.

St. Augustinegrass is followed by zoysiagrass in shade tolerance in warm season turfgrasses. Bermudagrass is also notably shade intolerant.

Removal of lower branches and thinning of limbs is one alternative to removing entire trees to obtain more light. Use of turfgrass in areas of permanent shade is fruitless, such as northeast corners of buildings or walls.



**Spray heads** *have fewer moving parts than rotary heads (inset) but are initially more expensive.*

### Air Circulation

Trees and structures can restrict air circulation over turf areas. Turfgrass releases moisture by transpiration through leaves. If this moisture, heavy dew or moisture from rainfall or irrigation is not controlled, the environment for many turf diseases is improved. That is why morning irrigation is favored over evening irrigation. Air movement helps moderate early afternoon soil temperatures for grasses in full sun.

On the other hand, too much wind can dessicate exposed leaf surfaces, increase the chance of winterkill, and prevent adequate moisture from reaching the soil.

As mentioned earlier, shortage of carbon dioxide on the soil surface is rarely a problem.

### Irrigation

If fine turf is the objective, irrigation of some form should be included in the site plan. Discussion with the customer or landscape architect will establish the commitment by the owner for fine turf. Without irrigation the customer can expect periods of summer dormancy, eventual transition to more drought tolerant and low fertility tolerant grasses such as tall or red fescue, and less control over seed germination after planting.

James Watkins writes in his book TURF IRRIGATION MANUAL that the relative cost of irrigation system choices is in a ratio of 4:2:1 (spray systems: rotary systems; and quick coupler systems). He advises that cost is only one consideration and each type of system should be evaluated for a particular site.

At the least, an irrigation design consultant should evaluate site drawings for approximate cost and water requirements. A well may be needed or a pump system for a lake. Today, irrigation installation is considerably less disruptive to a site. Vibratory plows and plastic pipe greatly reduce turf damage.

Drip irrigation is an alternative to shrub heads for some sites. The drip lines cannot withstand surface disturbance. If an underground system is installed for the turf, an extra zone for shrubs may be more practical than a separate drip system.

Extra care during seeding or sodding is required around irrigation heads. Heads should be properly installed to prevent puddling around heads and to assure clearance of turf after installation. Controls, pumps and valves should be secured to prevent vandalism or theft.

The landscape contractor should find a reputable irrigation designer to handle subcontracts. A good relationship will help the installation look its best for a long period of time. The customer must be clearly apprised of the maintenance needs of the irrigation system and the proper use for good turf care.

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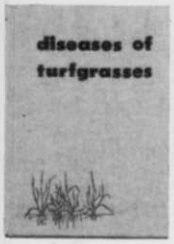


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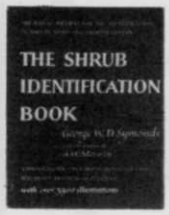


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**Soil Preparation**

The most common state of a site when the contractor arrives is the topsoil has been replaced and rough graded. It is not unusual for the contractor to see the need for further grading, backfilling curbs, foundations, and perhaps trenches that have settled; and additional topsoil where needed.

If topsoil has not been replaced, the contractor has the opportunity to amend and mix the topsoil to optimum conditions. A soil shredder or mixer can simplify this task. He also has the opportunity to grade the subsoil for improved drainage if necessary.

Musser and Perkins of Pennsylvania State University recommend in TURFGRASS SCIENCE that the topsoil mix consist of one part peat, four parts sand, and five parts topsoil. It should be well mixed and spread to a depth of at least six inches.

If topsoil is already in place, amendments can be added and mixed with a cultivator. Overworking the soil can break down aggregates and destroy the soil texture. Also, soil preparation should not be attempted in wet weather to prevent compaction. Limestone and phosphorus do not leach readily and should be incorporated with the top-

**Seeding Rates Recommended.**

| Type | Seeds/lb. (in thousands) | Seeds/in. | Germ. Rate | Lbs. Seed/1,000 sq. ft. Beard | Musser |
|---|---|---|---|---|---|
| Bahiagrass | 170 | 7-9 | 80% | 6-8 | 4-8 |
| Bentgrass | | | | | |
| Creeping | 7,900 | 30-50 | 85% | 0.5-1 | 1-1.5 |
| Colonial | 8,750 | 30-60 | 85% | 0.5-1 | 1-2 |
| Velvet | 11,800 | 40-80 | 90% | 0.5-1 | 1.5 |
| Bermudagrass (hulled) | 1,800 | 12-20 | 85% | 1-1.5 | 2 |
| Bluegrass | | | | | |
| Kentucky | 2,200 | 15-25 | 75% | 1-1.5 | 2-3 |
| Rough | 2,500 | 18-25 | 80% | 1-1.5 | 2-4 |
| Centipedegrass | 400 | 10-15 | — | 4-6 | — |
| Fescue | | | | | |
| Chewings | 546 | 15 | 85% | 3.5-4.5 | 3-5 |
| Creeping Red | 550 | 15 | 85% | 3.5-4.5 | 3-5 |
| Tall | 225 | 10-15 | 85% | 7-9 | 4-8 |
| Perennial Ryegrass | 225 | 10-15 | — | 7-9 | 5-6 |
| Zoysiagrass | 1,400 | 20-30 | — | 2-3 | — |

**Turfgrass Tolerances.**[1]

| Type | Shade | Wear | Drought | Cold | Heat | Salt |
|---|---|---|---|---|---|---|
| Bahiagrass | — | good | high | poor | — | — |
| Bentgrass | | | | | | |
| Creeping | good | poor | poor | high | medium | good |
| Colonial | medium | poor | poor | good | medium | poor |
| Velvet | high | — | poor | good | medium | — |
| Bermudagrass | poor | high | high | poor | high | good |
| Bluegrass | | | | | | |
| Kentucky | poor | medium | medium | good | medium | poor |
| Rough | good | poor | poor | high | poor | — |
| Centipedegrass | medium | poor | poor | poor | high | poor |
| Fescues | | | | | | |
| Chewings | low | — | — | — | fair | — |
| Creeping Red | high | medium | good | medium | fair | poor |
| Tall | good | good | good | medium | good | medium |
| Perennial Ryegrass | medium | medium | fair | poor | fair | medium |
| St. Augustine | high | medium | fair | poor | high | good |
| Zoysiagrass | good | high | high | medium | high | good |

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# Sod Production and Topsoil Loss

The present day concern over topsoil loss to erosion has expanded in some areas to a concern over soil depletion by sod production. If fact, some sod producers claimed soil depletion allowances in 1978 before the American Sod Producers Association convinced Congress that such allowances did not fit the practice of harvesting sod. Had ASPA not obtained this exemption for sod producers, they would have been forced to implement an inventory system of accounting for tax purposes.

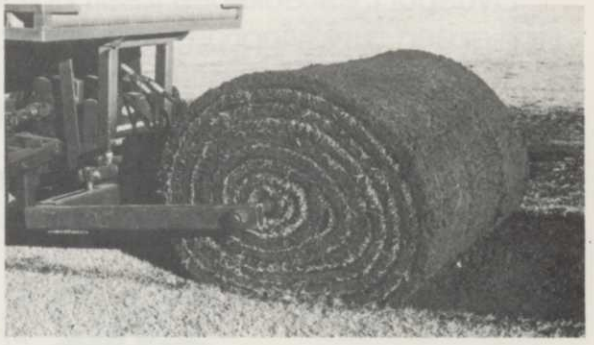
Great strides have been made in reducing sod thickness over the last 20 years. Researchers and sod growers have proven the benefits of thinner sod. Thinner sod roots more rapidly and cuts transportation and handling costs. Sod thickness is today primarily a function of sod strength. Knives are set just low enough to prevent scalping on uneven spots in the fields.

Research by Skogley and Hesseltine at the University of Rhode Island has identified harvesting method and the age of a stand as the main factors in sod thickness. Three-year-old sod could be cut at slightly thinner thicknesses than two-year-old sod. The machinery's ability to handle uneven fields can reduce the thickness further.

Actual blade adjustment may seem minute, but a 1/16-in. higher setting could save six tons of soil loss per acre.

Production of sod, as compared to other agronomic crops, actually improves the organic matter content of the soil by two percent per harvest. This is due to the fact that most of the turfgrass roots remain in the soil after harvesting and decompose.

Skogley and Hesseltine found that sod production removed less topsoil than many other crops. Wind and water erosion are greatly reduced by grass cover as opposed to open crops such as corn, soybeans, and cotton. Planting winter wheat often provides farmers with reduced winter topsoil loss.



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ECLIPSE Kentucky bluegrass covers the roof and is destined to be a leader. It germinates fast and performs well in sun or shade. Shade test trials proved ECLIPSE better than many varieties on both East and West Coasts. Developed at Rutgers, ECLIPSE has excellent stem rust resistance, improved resistance to the Fusarium blight and the dollarspot disease. Dark green, medium-textured ECLIPSE is a good base for sod blends and turf seed mixtures.

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soil if soil tests indicate a need. It is also a good time to mix in potassium and minor elements. Nitrogen need not be added at this time.

If there is a delay between rough grading and seeding, weeds will have emerged. Although the process of fine grading will kill most of the weeds, persistent grassy weeds can cause problems later. Most herbicides take two weeks or longer to dissipate after application. Roundup can be used on problem weeds if necessary and will dissipate within three days. Soil fumigants can be used for control of weeds, nematodes and insects if desired. Seed can usually be planted two or three days after fumigation. An advantage of fall seeding for cool-season grasses is the aggressiveness of the turfgrass in relation to broadleaf weeds during cooler, sunny days. Spring seedings face a strong challenge from broadleaf weeds during summer. Spring is often the preferred time for warm season grass seeding.

Just prior to seeding a complete fertilizer should be applied. Approximately one pound of nitrogen per 1,000 square feet can be soluble in form, with the remainder in slow-release form. Enough slow-release nitrogen should be applied to delay a second fertilizer application for six to eight weeks. The starter fertilizer should contain adequate levels of phosphorus and potassium since the seed is close to the surface. The turfgrass won't take advantage of the phosphorus mixed into the topsoil beforehand until it roots. Phosphorus will not leach or move to the surface.

**Seeding**

Two overlooked factors in seeding are the number of seeds per pound and the difference between spreading and bunch type grasses. One misconception in seeding is the idea that if one rate is good, a higher rate is better. This is related to the idea that seed is cheap in comparison to proper soil preparation.

A good lawn is constructed like a good house, from the foundation up and with good materials. Short cuts in the beginning cannot be overcome later. Constant repair could keep the lawn alive but can easily exceed site alterations or soil amendment in cost.

Assuming the seedbed was properly constructed, the seed rate should be determined by seed count. Seed count varies according to species and cultivar. (see table). Beard in his textbook TURFGRASS SCIENCE AND CULTURE specifies the number of seeds per square inch for North American species. If that number is applied to the total area of the seedbed and divided by the number of seeds per pound, a seed rate in pounds per acre can be determined. Each component of a mixture can be figured by seed count to derive an appropriate rate for a mixture. Lower rates for spreading grasses can be used. Sod producers often use lower rates for Kentucky bluegrass than a landscape contractor would.

For bunch type turfgrasses, such as tall fescue and perennial ryegrass, seed count, adjusted by germination percentage, should be slightly higher than the number of shoots present in a mature stand. This would mean roughly 15 seeds per square inch for tall fescue and perennial ryegrass, which works out to be about eight pounds per 1,000 square feet. Ken-


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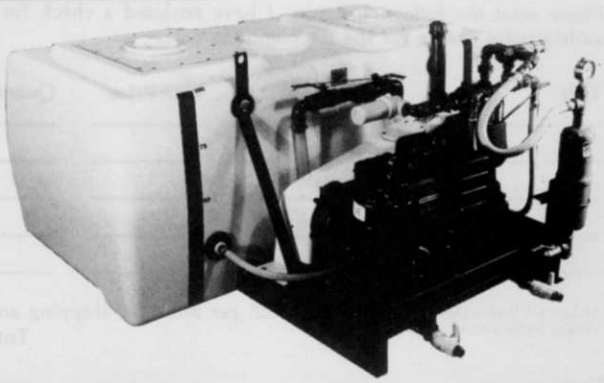

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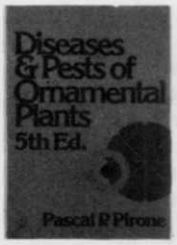


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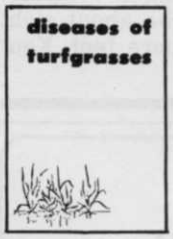


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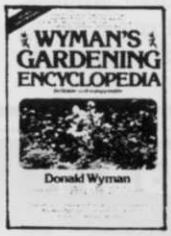


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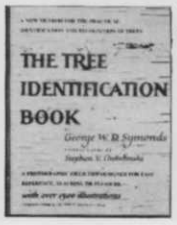


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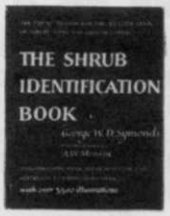


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tucky and rough bluegrass can establish satisfactorily at one pound per 1,000 square feet. Bentgrass will succeed at one half pound per 1,000 square feet.

Higher seeding rates can actually cause the turfgrass to crowd itself and to compete for light and nutrients. Weakened seedlings are more prone to disease and insects than seedlings from correct seed rates. The hurry to establish a turf cover may not be worth the weakened turf caused by higher seed rates.

High seed rates are not insurance. The recommended rate is also the cheapest rate. Excessive amounts of seed discourage the use of improved cultivars due to cost. The cost of tall fescue is not a great deal cheaper when the seed rate is multiplied by the cost per pound.

If erosion by rain or wind is a concern with the seed rate, the correction should be in the method of seeding or in the use of mulch rather than the increase in seeding rate. If slopes are extreme, netting or sod should be considered over standard seeding.

For best germination seed should be covered with one quarter to one half inch of soil. Surface seeding is not as effective. Soil retains moisture better than most mulches and supplies the seedling with water following germination. If a mixture of seed is used, a centifugal seeder will not provide even distribution of all seed types. Drop spreaders or a cultipacker are preferred. The seedbed can be rolled after seeding to improve soil/seed contract.

Many types of mulches are available for water retention and erosion control. Rates vary with the product. Straw and an asphalt binder can be used. Clean straw must be used to avoid contamination by forage grasses.

Fall is the preferred time to seed. Rainfall, temperature and other factors cause this to be the best time. Seeding at other times will require backup irrigation, greater weed competition, and higher seedling mortality. Sod may be a better choice for late spring and early summer lawn installation.

**Sod Transplant Rooting Characteristics of Several Kentucky Bluegrass Cultivars/(Transplant Rooting Measurements Were Made 21 Days After Sod Placement)**

| High | Intermediate | Low |
|---|---|---|
| Merion | Baron | S. Dakota |
| Touchdown | Majestic | Newport |
| Adelphi | Fylking | Cougar |
| Victa | Park | Delta |
| Glade | A-34 | Galaxy |

(Study conducted at the University of Nebraska, R.C. Shearman)


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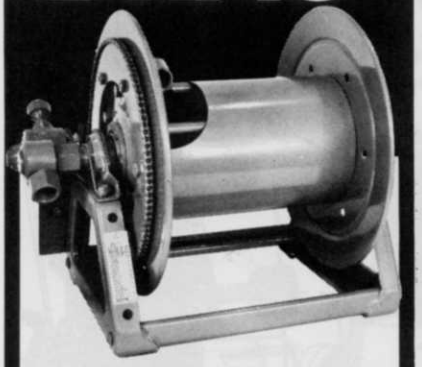

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### Sod Installation

Sod, the instant lawn, is the fastest method of lawn establishment available. It is also the most expensive.

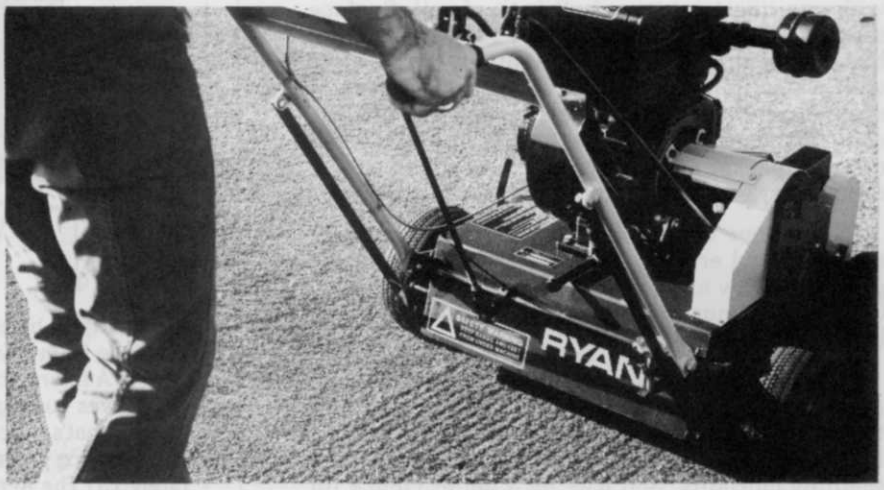
Soil preparation is the same as for seed. Sod must be handled quickly and kept moist. The best sod for a site is one that was grown on soil of the same texture. The soil should be sprayed lightly just prior to laying the sod. After the sod is down and trimmed, it should be rolled and perhaps topdressed at edges and joints if necessary. The sod should be soaked thoroughly two or three times per week for at least four weeks. Some turfgrass sods knit more rapidly than others. These sods should be specified for areas where use is anticipated soon after installation, such as athletic fields or greens.

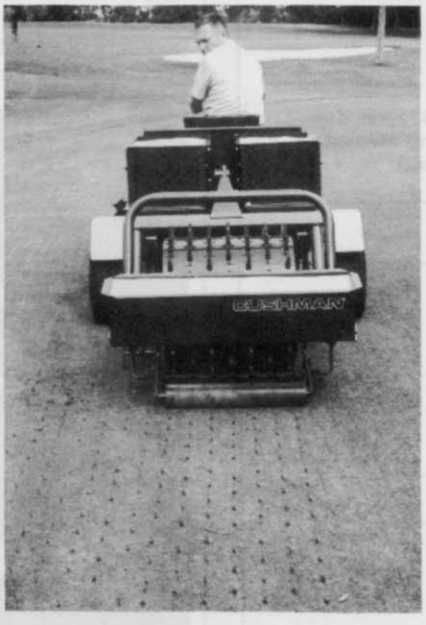
Sod should be irrigated regularly throughout its first season. It has received high levels of maintenance at the sod farm and has adjusted to frequent water and feeding. Sod producers select aggressive cultivars for fast knitting and growth. Like any fine lawn, sod represents a commitment to maintenance and must receive it to remain healthy. Sod in shady areas will take longer to knit than in full sun. Sod for shaded areas should contain shade tolerant cultivars.

Sod can be staked to slopes where erosion and seeding failure are more likely. Ditches designed to carry infrequent runoff may also be sodded.

### Vegetative Planting

Vegetative plantings can produce a mature turf stand more rapidly than seeding. They too cost more than seeding, but less than sodding.




**Verticutting** *(above) is an essential step in lawn renovation to obtain satisfactory seed/soil contact and to avoid seed germination in the thatch layer.*

**Aerification** *(bottom) improves drainage and air penetration and reduces the chance of compaction by traffic. One extra step is to sand topdress into holes.*

# TWO GREAT GAMES ONE GREAT GRASS

Super Bowl XIV and the Rose Bowl classic were the great games. The turf? That was Derby Turf-type perennial ryegrass.

Derby was selected by George Toma, the man responsible for the Super Bowl XIV turf and Gus Huntly, turf manager for the Rose Bowl game, because of the special requirements for these special games.

Toma and Huntly wanted a fast-germinating, dark-green, handsome grass as well as one tough enough to take a pounding and still look great for the television cameras.

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Derby is also a great mixer, combining with the fine fescues and bluegrasses to form an outstanding turf.

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- *Retains its deep green color during chilly Southern winters*
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- *Thrives when cut to 3/16, 1 inch or 1½ inches*
- *Mixes nicely with fine fescues and bluegrass*

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Labor needs are greater than seeding.

Once again, site preparation is the same as for seeding. Sprigs are planted in 8 to 12 inch rows in three-inch deep slits. Two to four bushels of sprigs are needed for each 1,000 sqaure feet. Stolonizing involves broadcasting stolon segments onto the prepared seedbed. The stolons are then topdressed with fine soil of the same origin as the seedbed. Broadcast planting takes five to ten bushels of stolons per 1,000 square feet.

Plugging is a third alternative. Like sod, best results are obtained if the soil in the plugs is similar to the seedbed. Rows 12 to 16 inches apart are planted.

Shade, lack of moisture, and inadequate fertilization will slow the spread of the vegetative material. Warm-season grasses have the advantage of remaining aggressive in comparison to many weeds during warm months. Vegetative plantings are monostands. Stolons of other grasses can infest a planting, especially in broadcast planting. Nurseries are certified by many states to assure that vegetative material is only of the desired type for the particular job.

**Renovation**

Renovation is becoming more popular as a method to improve existing turf stands. Roundup has shortened the process with its near lack of residual activity.

It is done either by seeding or sprigging into existing turf stands that have been treated. Soil improvement is limited to aerification and topdressing if done. Thatch should be removed with a thatcher or verticutter. Cores should be broken up and a starter fertilizer applied. Seed is applied and brushed or rolled to assure surface contact. If preferred, the seed could be lightly topdressed.

The area should be watered just as a normal seedbed following seeding. The existing vegetation provides some protection against erosion but does restrict full light from reaching the seedlings. Shaded areas may not respond to renovation. Soil is not appreciably better than before renovation either. It is a partial solution and may not reduce maintenance levels or correct basic soil deficiencies.

**Overseeding**

Overseeding for winter transition or turf improvement is perhaps the fastest growing use of turfgrass seed. It is renovation without killing the existing turfgrass.

Cool-season turfgrasses are overseeded into warm season grasses as they go dormant in the winter. Turf texture and color are retained throughout the winter months. Upon return of warm weather, the warm season grasses come out of dormancy and dominate the cool season turfgrass.

Overseeding with similar turfgrasses is also feasible. Thin stands of Kentucky bluegrass can be verticut, closely mowed, and seeded with improved varieties. This is a less expensive way of adding disease or shade tolerant cultivars to older bluegrass stands.

High rates of seed are used in overseeding. Mortality is higher for seedlings in overseeding. Seeding rates double that for regular seed establishment are common. Seed can be lightly topdressed. Traffic should be restricted in the area if possible. In some cases fungicides are applied soon after overseeding to improve germination and survival.


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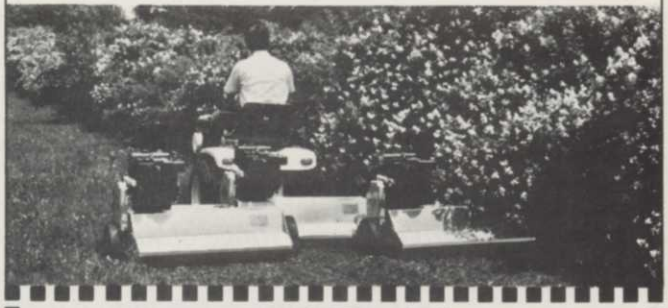

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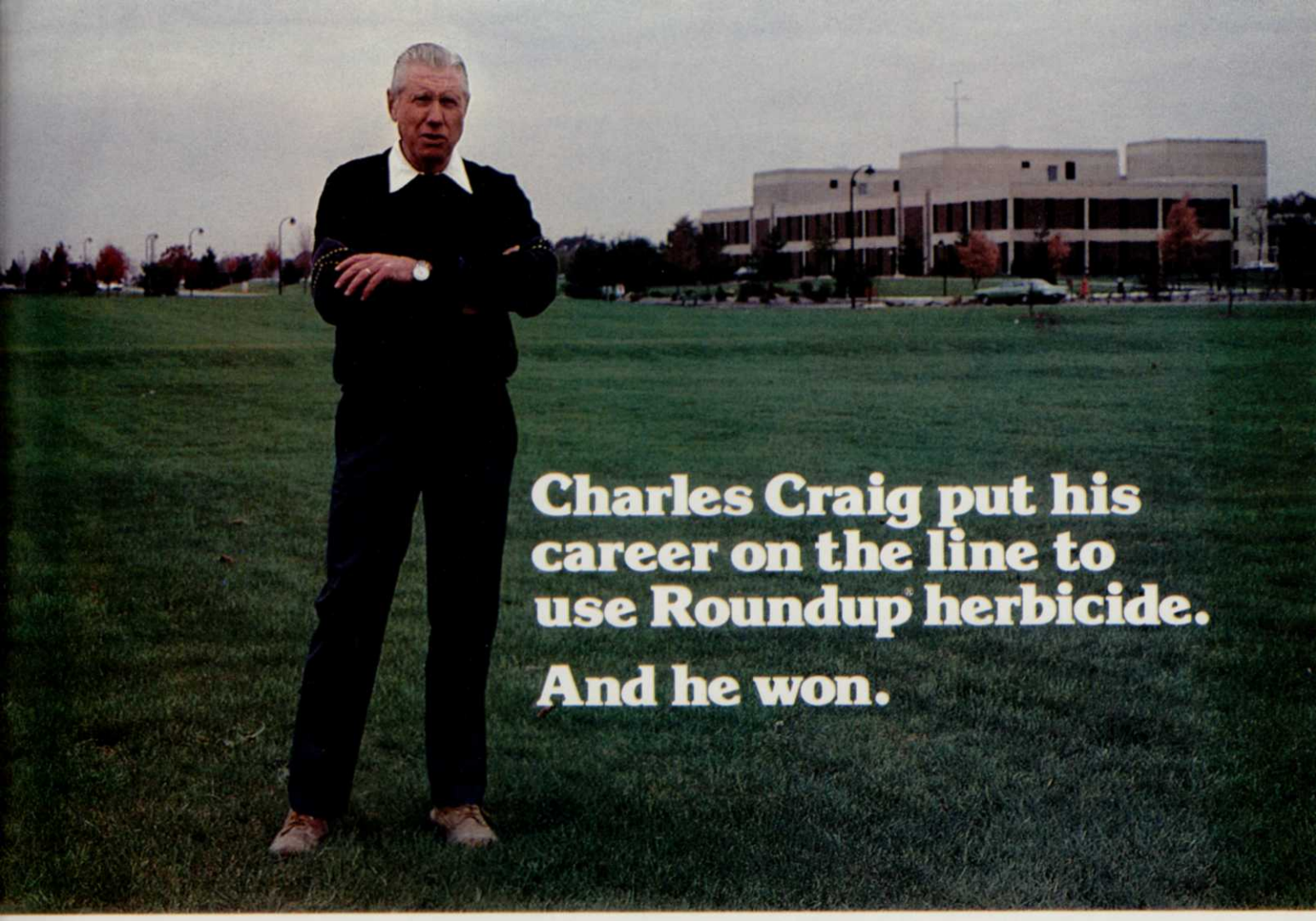

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But, fortunately, Charles didn't have to go into hiding because just 7 days after he applied Roundup he was able to reseed right into the dying grasses.

"Yes, I put my career on the line, but I felt all along that Roundup was going to work," Charles says. "There was no doubt in my mind."

As horticulturist for Mercer County Community College in Trenton, New Jersey, Charles Craig depended on Roundup for the broad spectrum control he needed for tough grasses like quackgrass, orchardgrass, tall fescue and others. And since Roundup has no residual soil activity, he was able to reseed in a matter of days.

"Seed germination was terrific, especially with the weather we had," Charles told us. "Everyone always says it looks nice."

Charles still uses Roundup for touch up jobs around cracks in the pavement, parking lots, buildings, tree bases and flower beds. Taking precautions against spray drift, Charles has no fear of harming surrounding vegetation with Roundup.

Charles Craig is convinced that Roundup works, and he has 35 acres of beautiful turf to prove it.

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# "Regal rye, I presume?"

The best-looking grass in Kansas City can be found, of all places, at the Harry S. Truman Sports Complex. Regal perennial ryegrass can be found here—in the landscaping around Arrowhead Stadium, as well as in the football practice field. Overseeding the Baron and Ram I bluegrass in this field with a team of perennial ryegrasses, including Regal, produces a playing surface that withstands the almost daily wear and tear by tough Kansas City Chiefs. The result, according to George Toma, Director of Field and Landscaping Operations, is a truly tough yet beautiful turf.

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**News** *from page 6*

unionization.

Rich Brolick, Zelenka Evergreen Nursery, Inc., Grand Haven, MI, spoke about problems with migrant labor. His company has spent over a million dollars in migrant facilities. "The key to the whole migrant program is the housing," said Brolick.

In addition to the sessions, John B. Wight, Jr., president and chairman of the board of Wight Nurseries, Inc., Cairo, GA, was elected president of AAN, replacing Hugh Steavenson, president of Forrest Keeling Nursery, Elsberry, MO.

The AAN inducted John J. Pinnery, Ottawa, KS, into the Nurserymen's Hall of Fame. It also presented two national awards to Harold Davidson, professor of horticulture at Michigan State University, for his nursery research contributions and effective teaching in horticulture.

To commemorate the convention, the AAN held a tree planting ceremony at the Nelson Gallery of Art and Atkins Museum in Kansas City.

LAWN CARE

## New officers elected for Lawn Institute

Norman Rothwell of N.M. Rothwell Seeds, Ontario, Canada, has been recently elected president of the Lawn Institute, and 18 new members have been elected to the Board of Trustees.

Other members serving with Rothwell will be Robert Peterson of E.F. Burlingham & Sons as vice president, and Robert Russell of J & L Adikes, Inc. as secretary-treasurer.

The Lawn Institute, sponsored by lawnseed breeders and growers, is a nationally recognized source of information concerning lawngrasses.

PROMOTIONS

## Toro promotes Adams to new position

The Toro Company recently promoted James W. Adams to the new position of senior vice president, International Operations, joining Toro's six-member executive management committee.

Since starting with the company in 1974, Adams has been a group vice president of Toro's irrigation operations.

COMPANY

## International Harvester changes co. name

International Harvester, Payline Group, has altered its name to Construction Equipment Group.

The new name is expected to improve worldwide recognition of the International Harvester Co. products for which this group has manufacturing and marketing responsibilities.

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WT&T

# VEGETATION MANAGEMENT

**By Roger Funk,** Ph.D., Davey Tree Expert Co., Kent, Ohio

**Q:** *What is the best chemical to control cottony maple scale on silver maples?*

**A:** We use primarily a combination of malathion and and sevin during the crawler stage (July in the Northeast). Field studies have shown similar results with Diazinon.

**Q:** *I read where dorman oil will remove the blue color from Colorado blue spruce. Is the loss of color permanent?*

**A:** It has been our experience that the blue color, which is a waxy exudate, normally returns within a month.

**Q:** *How do you treat the soil to prevent root graft transmission of Dutch elm disease?*

**A:** According to the Vapam label from Stauffer Chemical Co., dilute one part Vapam to three parts water. Drill holes approximately ¾ to 1 inch in diameter, 15 inches deep, and 6 to 9 inches apart. Fill each hole with diluted Vapam to within 2 inches of the soil surface.

Make a line of treatment sufficiently long to kill all roots of the adjacent trees that are likely to be root-grafted. Apply the chemical slowly and carefully to avoid overflowing the drilled holes and tamp each hole until closed. Allow at least two weeks after treatment before removing the diseased trees.

**Q:** *I recently came across the term $LC_{50}$ and thought it was a misprint for $LD_{50}$, but I have since seen it again in print. I have not been able to find anyone who knows what it means (if anything). Can you help?*

**A:** $LC_{50}$ is the median lethal concentration rather than the median lethal dose ($LD_{50}$). It is often used to measure the toxicity of a chemical present in air or water.

**Q:** *Do fungicides protect turfgrass growth that occurs after the application?*

**A:** Contact fungicides do not. Systemic fungicides are absorbed by the roots and translocated throughout the plant system. Newly emerging leaves may contain sufficient concentrations for protection against certain infectious organisms.

**Q:** *How long do you have to wait to reseed a lawn after applying broadleaf herbicides?*

**A:** In general, a waiting period of three to six weeks is recommended before reseeding since these herbicides can cause seedling injury.

Recent research has shown that when using a slicer-seeder herbicides could be applied at or prior to seeding with no significant reduction in turf stand.

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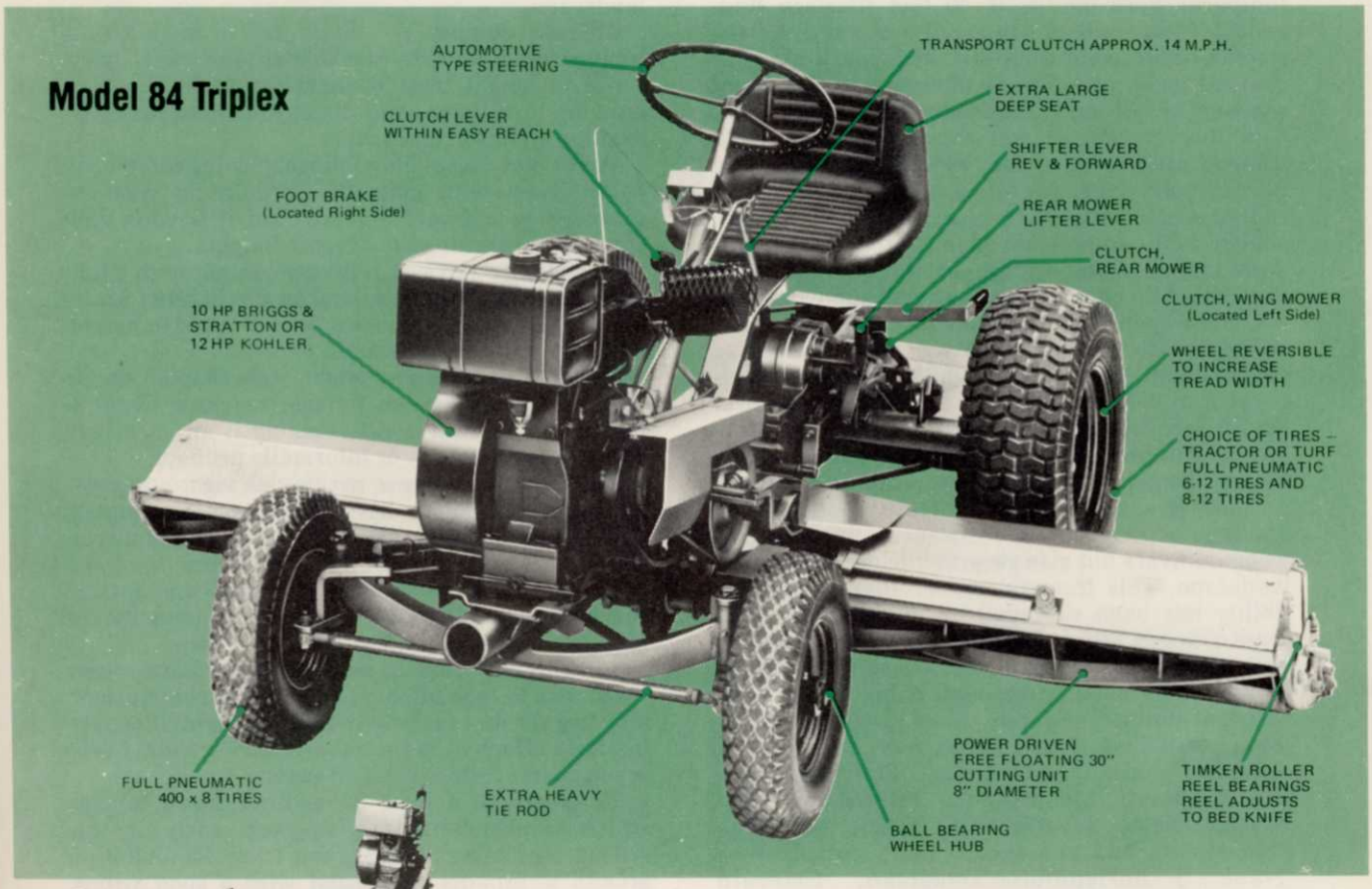


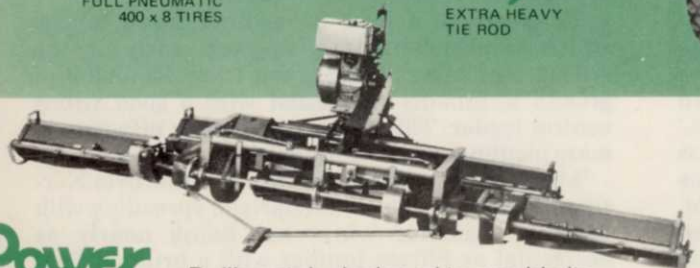

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# JUNIPERS THRIVE IN VARIOUS SOILS, SUIT MANY PLANTING DESIGNS

**By Douglas Chapman,** Horticulturist, Dow Gardens, Midland, MI

If used correctly, cultivars of juniper (*Juniperus chinensis, communis, horizontalis, and sabina*) and Eastern Redcedar (*Juniperus virginiana*) can add variety and low maintenance to the landscape while being tolerant of urban conditions. Their ultimate height varies from 6 inches (native *Juniperus horizontalis*) to 40 feet (Eastern Redcedar). Junipers thrive in conditions varying from swamp-water sand (Eastern Redcedar) to well-drained rocky sites. They will grow in the shade of a swamp or full sun of foundation plantings.

Juniper thrives in soil conditions from well-drained sand to heavy, yet well-drained clay. The pH can vary from 5.0 to 7.0 with little problem. Junipers can be used in mass plantings, hedges, shelter belts, foundation plantings, and rock gardens, in fact, almost any application. They thrive in full sun while only tolerating partial shade, in fact, becoming open and leggy in shady conditions.

The insects and diseases are many, including cedar apple rust, twig blight (*Phomopsis juniperovora*), web worm, scale, mites, and bagworm (in Illinois, Indiana, and Missouri), but only a few are catastrophic. The catastrophic pests are twig blight (*Phomopsis juniperovora*), scale and mites.

There is a tremendous varietal variation as to *Phomopsis* (twig blight) resistance, not only between cultivars but also geographic locations in the landscape. This tremendous variation of susceptibility has been surveyed by many of the land grant colleges. When designing a planting, checking with your local Cooperative Extension Service for an approved list is paramount. A few of the most resistant juniper varieties, as reported by Laemmlen, Michigan State University, included *J. chinensis* 'Ames,' 'Armstrongii,' 'Fairview,' 'Hetzii,' 'Keteleeri,' 'Mountbatten,' 'Pfitzeriana,' 'Pfitzeriana Aurea,' 'Pfitzeriana Compacta,' *sargentii, procumbens,* and to a slight extent, *procumbens* 'Nana'; *J. horizontalis* Douglasii,' 'Emerald Spreader,' and 'Wiltonii'; and *J. sabina* 'Arcadia,' 'Broadmoor,' and 'Von Ehron.' Moderate success has been achieved when spraying several times (two minimum) with Benlate and a wetting agent. Use of chemicals during a cool, wet spring, when the disease is rampant, has met with varying results.

Scale and mites can be severe problems. Many junipers that stop growing are suffering from a severe mite infestation which occurs during the heat of summer. Control is relatively easy with a miticide or ovacide when a slight yellowing or bronzing of the foliage becomes apparent, symptomatic of a heavy infestation.

The only effective way to discuss junipers is by cultivar. The over 170 cultivars available in the trade, as reported by Wyman, make this an exciting yet confused group. Further, each year additional varieties are being selected and introduced. Therefore, one should be continually trying new cultivars to add resistance and variety in the landscape. The following discussion of cultivars is designed to assist landscape architects and grounds managers make effective decisions, reducing maintenance while improving the quality of the landscape.

**Chinese Juniper** *(J. chinensis)* is an exciting juniper when considering the many cultivars. They range in height from 12 inches to 15 feet, prefer growing in full sun, and display a broad range of exciting greens in landscapes.

'Ames' has a steel blue foliage, turning somewhat paler green with maturity. Initially, it was introduced as a dwarf, but we find it is wide and spreading, reaching 3 to 4 feet in height.

'Armstongii' is a sort of Pfitzer Juniper with a softer blue-green foliage, taking on the habit of Compact Pfitzer, rarely reaching over 3½ feet in height while being quite horizontal.

'Blaauw' is a semi-upright vase-shaped shrub with a rich blue-green foliage, reaching about 4 feet in height and width, making it an excellent hedge plant; formally or informally pruned.

'Fairview' is a narrow, pyramidal, vigorous growing plant with silver berry-like cones developing during late summer and early fall. This cultivar shows resistance to twig blight and mites.

'Hetzii' is a large, upright growing shrub, reaching 15 feet in height and width at maturity. Its foliage is dense, being lightly bluish-green.

'Iowa' is reported in some areas to have slight resistance to twig blight and is a somewhat upright growing shrub, reaching 10 feet in height. It is particularly effective in formal areas where that blue-green coarse foliage can add variety.

'Keteleeri' is a light to medium green foliage which is somewhat grayish-green early in the season, becoming a light green later. The habit of growth is broadly pyramidal with a good strong central leader. This plant is extremely effective in mass plantings or as informal hedges.

'Mint Julep' is an introduction of Monrovia Nursery. Its habit is somewhat upright, spreading with arching branches while not being nearly as horizontal as Pfitzer Juniper with a brilliant light green foliage. It is a uniquely shaped vigorous addition to the informal landscape.

'Mountbatten' is a 20-foot, dense, somewhat compact, narrow pyramidally-shaped tree. The foliage is a steel blue-green, reaching 18 to 20 feet in height.

'Pfitzeriana' is probably the most widely planted of the juniper types. Its broad spreading form, which reaches 5 to 6 feet in height and 10 feet in width, gives almost a fountain-like appearance. It is effective in mass plantings or as specimen shrubs. The light green foliage and habit are characteristic.

**Mint Julep,** a cultivar of Chinese Juniper *(J. chinensis)*, spreads brilliant light green foliage.

'Pfitzeriana Compacta' is a dwarf or compact Pfitzer with gray-green foliage. It is slower growing and well suited to foundation planting. One must mulch late plantings heavily as winter injury can be a problem when planted in September and October.

Sargentii, a low-spreader juniper, 18 to 24 inches in height, with a 6 to 8-foot spread, is quite regular, giving a formal appearance to the area. It can be effective in mass plantings or as a ground cover with exciting blue-green foliage. Sargent Juniper shows excellent resistance to twig blight.

Procumens (Japanese Garden Juniper), now listed as *J. chinensis procumbens*, is one of the premier juniper types. It reaches 12 to 28 inches in height with a 5 to 10-foot spread. Its light green foliage is exciting, allowing it to adapt well as a ground cover or specimen plant. It is extremely effective in beds or mass plantings, being contained easily with light pruning. In Michigan, *Phomopsis* (twig blight) rarely develops, but mites can become a problem.

Procumbens 'Nana' (Dwarf Japanese Garden Juniper) is very slow growing and considerably more compact. It may be used as a ground cover in rock gardens or in open areas. In Michigan and Ohio twig blight is an extreme problem. This plant has a place in the landscape, but it is so slow growing that any slight damage can often result in a plant that decreases in stature. It should be used sparingly in Michigan, but Dirr has reported few problems in Illinois. Again, check your local Cooperative Extension Service.

**Common Juniper** (*J. communis*) is native to a broad area of the United States. It should be noted though that provenance is important. Plants doing extremely well in New England will not always flourish in Pennsylvania. The habit of this small tree is somewhat ascending, reaching 6 to 12 feet in height. Wyman reported Common Juniper reaching 36 feet in the wild. The plant is sprawling with a fine needle-like foliage which is gray to blue-green in the summer, taking on a somewhat yellowish cast during the fall months. The cultivars of this group are well discussed in literature, but one should visit local nurserymen or the Cooperative Extension Service to obtain information as to local adaption.

**Creeping Juniper** (*J. horizontalis*) is an exciting native ground cover plant. Although there are many varieties in this group which tolerate hot, dry, sunny locations, it is exciting when used in rock gardens, foundation plantings, or mass plantings for erosion control. Many of the cultivars are extremely susceptible to twig blight; therefore, I shall only discuss the few which are showing good or almost complete resistance.

'Douglasii' is a very horizontal, rapid growing shrub. It reaches 12 to 18 inches in height and 6 to 8 feet in width. The blue-green foliage of summer often turns somewhat purplish throughout the winter months, adding additional color to the landscape.

'Emerald Spreader' is a low growing form, rarely over 6 to 8 inches in height with a light open habit. Its brilliant mint-green foliage is a great addition to the landscape, held year round.

'Wiltoni' or 'Blue Rug' is a very horizontal form, reaching 6 to 8 inches in height with a spread of 6 to 8 feet. Once established, this plant can grow quite rapidly.

**Savin Juniper** (*J. sabina*) and its cultivar are an exciting addition to the landscape. They range in height from 1 to 6 feet with a 5 to 10-foot spread. The species has dark green foliage in the summer, becoming a dull green during the winter months. It does extremely well on our high pH soils.

'Arcadia' has a similar habit of growth as *var. tamariscifolia* while being more prostrate, growing one foot in height and 3½ feet in width. The foliage is predominately grass green. 'Arcadia' shows good resistance to twig blight.

'Broadmoor,' a dwarf low-spreading shrub which tends to build up from the center with age, is unique in habit and color. The color, early in the season, is a brilliant mintgreen, becoming a soft gray-green during late summer, fall, and winter. 'Broadmoor' rarely goes over 18 inches in height while being five to 10 feet across.

'Von Ehron' is a vase-shaped shrub, 6 feet by 10 feet in the landscape, while reaching 15 feet by 45 feet, according to Wyman. The foliage is a light green. 'Von Ehron' has few problems while being extremely resistant to juniper twig blight.

**Eastern Redcedar** (*J. virginiana*), a native with an extensive range covering most of the area east of the Mississippi, thrives in well-drained, gravelly, high-water table soils but will tolerate almost any diverse soil condition. When young, it is fairly tolerant of shade but thrives in sunny, open areas. It is an excellent specimen or mass planting tree useful in hedges, windbreaks, or native planting. It reaches 40 to 50 feet with a 10 to 20-foot spread. Resistance to twig blight should be paramount in selection of cultivars. Some of the tree forms which show good twig blight resistance include 'Burkii,' 'Cupressifolia,' 'Glauca,' and 'Hillii.'

Junipers and Eastern Redcedar are extremely tolerant of many urban conditions. They thrive in droughty-gravelly soils needing little care if the correct plant is selected. That correct plant is one that will not outgrow its area or be attacked by mites or juniper twig blight. Juniper adds another dimension to our landscape with a narrow-leaf evergreen which thrives under severe winter or summer conditions. It is highly competitive and, therefore, should not be used around every tree, but only trees which are deep rooted and effective competitors, e.g., Bur Oak. **WTT**

# WT&T CLASSIFIEDS

**CLASSIFIED CLOSING DATES:**
**October issue closes September 4**
**November issue closes October 8**
**December issue closes October 30**

**When answering ads where box number only is given, please address as follows: Box number, % Weeds Trees and Turf, Dorothy Lowe, Box 6951, Cleveland, Ohio 44101.**

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**MYERS INDUSTRIAL SPRAYER,** mounted on 1972 Chevrolet truck, 1,000 gallon tank with power agitation. Excellent condition, $10,500.00. Lakewood Country Club, 216 835-4398.

**SPRAYER, 1979 Bean Turf** model 1010T, 150 gallon stainless, 500 psi, 10 GPM, flotation tires, like new, $700.00 below cost. 712 623-9372, Rand Wilson, Box 56, Red Oak, IA 51566.

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**FOR SALE Jacobsen F20 turf tractor,** 9 gang reel mower, 5 blade Blitzer mowers, diesel engine, running lights, power steering, 850 hours, good condition. 317 842-1813.

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**SOD QUALITY Seeds:** Adelphi, Glade, Cheri, Nugget, Merion, Fylking, Majestic, Baron & Touchdown bluegrasses, also fine fescues. Manhattan ryegrass. Custom mixing available. Michigan State Seed, Grand Ledge, Michigan 48837. Phone 517 627-2164.

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## HELP WANTED

**ADVERTISING SALES POSITION AVAILABLE** with a growing specialty agri. magazine, Chicago territory. Requires individual with 1 to 2 years chemical and equipment sales experience in the agri. or specialty agri. market at the distributors level. Ad. space sales experience desirable but not required. Salary plus commission, all expenses, a strong benefit program and plenty of room to advance. Reply to Box 243, Weeds, Trees & Turf, Box 6951, Cleveland, Ohio 44101.

**JOB OPENING IN HORTICULTURE.** Position: Working supervisor and gardener for Kentucky estate. Requirements: Proficiency in horticulture, landscape, greenhouse and garden management. Knowledge of aboriculture and landscape operations highly desirable. References required. For terms and personal resume please contact Mrs. Dillon, P.O. Box 61334, Houston, 77208.

**SUPERVISOR: Bell Telephone Laboratories,** Holmdel, N.J., has an immediate opening for a grounds maintenance supervisor. This position calls for professional planning and direction of landscape, grounds maintenance and snow removal programs. Please send resume to J.J. Lenox, Bell Telephone Laboratories, Room 3C-340, 600 Mountain Avenue, Murray Hill, New Jersey 07922.

**LANDSCAPE SUPERINTENDENT —** Houston's fastest growing landscape contractor is offering a position of unlimited potential. Excellent salary, year round security, bonuses, company transportation, paid vacations, good group health insurance and more. A steady work history in commercial landscape and sprinkler installation is required. Responsibilities include scheduling, supervising and managing all material and labor for 5 crews. Contact Harry Thompson immediately for an interview at 713 464-0016 or 713 492-7868.

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*Continues on page 120*

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*from page 118*

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**LEARN LANDSCAPING** and the growing of plants at home. Start a satisfying business or hobby. Free booklet. Lifetime Career Schools, Dept. A-829, 2251 Barry Avenue, Los Angeles, Ca. 90064.

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### NEXT MONTH IN WTT

We will resume our regular departments, many of which had to be cut this month for our special Buyer's Guide issue. Look for part 4 of the Turf Management Series on "turf care and maintenance techniques."

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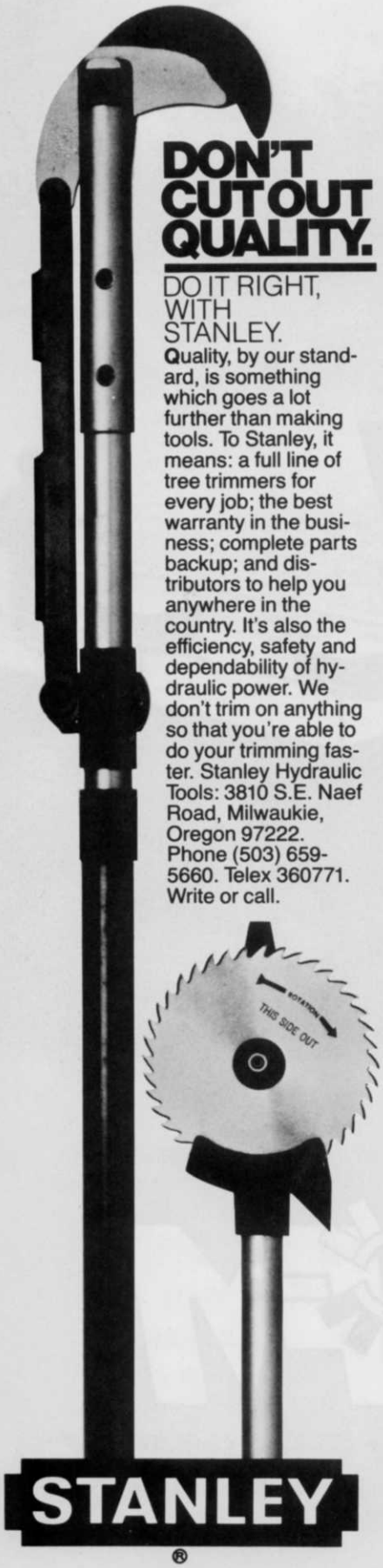


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# Jamestown
## Chewings Fescue

Researchers have long looked for a fine-leafed fescue that has the color and adaptability of modern bluegrasses and that will look well in a seed mixture. Jamestown, a low-growing new variety of chewings fescue, developed at the University of Rhode Island, is the answer for nearly every turf condition required. Jamestown has good disease resistance, shade tolerance, the darkest green color of any fescue on the market and wide adaptation. Jamestown has been thoroughly researched by universities and independent research groups throughout the United States and Canada. But, most importantly, the low growth and brilliant color are the outstanding virtues landscapers, contractors, sodmen and golf course superintendents count on. Jamestown can be used for practically any turf condition.

**GENERAL LANDSCAPE...**
For home lawn use, institutional, parks...university studies from Winnipeg, Canada to Maryland have consistently rated Jamestown number one in overall quality for the past five years. Jamestown broadens the adaptation of bluegrasses because of shade tolerance and lower fertility requirements.

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Jamestown is ideally compatible in persistence and color to the new Kentucky Bluegrasses such as Baron and Majestic. It s natural low and dense growth combined with its deep rich color makes Jamestown the number one fescue for use in the sod industry.

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**Remember. . .** *Jamestown is particularly useful where turf conditions are less than perfect. It does very well in non-irrigated and somewhat infertile soils where the turf may be subject to adverse conditions on low maintenance budgets.*

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